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HINTS FOR JANUARY.

FLOWER GARDEN AND PLEASURE GROUND.

Art is said to be but nature, better understood; but there is not, nor ever was, anything in nature like a well-designed and well-kept garden. In the old style of dutch gardening of the last century, art was run mad. The odd shapes of the flower-beds, or likening of trees and shrubs, by pruning to birds or beasts,—all these things were mere fantasies, not true art; and when the revulsions came, and true taste was considered to be nature better understood, art had little chance to show what it really was.

To act on this principle in the old world, is not so grievous an error as it is with us. On the large scale of gardening there, so often adopted, we can approach nearer to wild scenery, and yet follow true art; but in our country, where large fortunes cannot often be spent in gardening, we have to put up with smaller places; and in these to have the pleasure which true gardening affords, we must have more of art and less of nature unadored, that would suffice in the large gardens of the old world.

We have often stated that one of the grievous errors of American gardening is that they are too large. American fortunes are not so steady. We have a succession of years of prosperity, and among other luxuries form a good garden; but it is hardly put in fair order before we find that its necessary expenses are too large for our income and the establishment runs down. We see these places everywhere. Here are gardens which ought to have half a dozen men to keep them properly, cut down perhaps to one laborer, besides the gardener; and the gardeners engaged are of the cheapest kind, and for all grudgingly paid. It should never be forgotten that it costs something to keep up a garden as well as to maintain horses and carriages. We build stables, and buy fine animals, but we well know that this is but the beginning of an annual cost. A garden must be viewed in the same light. Many lose interest in their gardens through getting poor gardeners. There is nothing new, no taste, no enjoyment. Far better to get some one of superior education and pay him well, though we have but half the extent of ground, or a much less number of greenhouses. We should advise all our friends to cut down their large gardens, employ with the difference only first-rate men at a fair price, and it will be wonderful how much the interest in the garden will grow.

Those who have small gardens may also profit by the hint. Have no more land occupied than can be kept in the highest order. Where no regular gardener is kept, and only the "jobber" a day or two a week is to be called in, use considerable judgment in the selection of the man. Near all large towns there are, at least, a half dozen to choose from. When the right one is found, be liberal with him. It is far better to encourage good knowledge and good taste, at the expense of smaller grounds, than to have large places badly kept, simply because a poor tool will work for wages which he could make as well by days work as a laborer on a railroad. So much for concentration of energy and expense.

In matters of practical detail, we may observe that during the past year the taste for those plants which present a tropical appearance, in

distinction to those usually growing naturally in our own climate, keep as popular as ever. Caladium, Rice-paper Papyrus, Cannas, Castor oil plant, Dracænas, and similar well-known things, are still made use of in the grounds of persons of the highest taste. More is made of succulents for out-door gardening than they used to do in the older time; as they give the needed artificial tone to the small garden. Yuccas and Agaves are common in prominent places, and the various species and varieties of Echeverias come into excellent use. Silvery-leaved plants are very common; indeed it would be very hard to make any rich effect with Coleus and other high colors, without these light-leaved things to contrast with them. The old "Dusty Miller" Cineraria maritima, comes in well for this purpose,—the Chamæpence, Gnaphalium (lanatum,) Centaurea ragusina and C. gymnocarpa, are the leading silver-leaved plants employed. For low variegated plants, the various Teilantheras and Alternantheras, are largely employed, and the Golden Feverfew is almost the only plant we can rely on for a good yellow tint. In a few cases we have seen low growing golden Arborvitæ and Retinosporas, used with good effect in flower gardening.

Among the novel ideas of the past season was a rather free use of the summer flowering Begonias for bedding. Usually they are kept under glass; but many of them do remarkably well in the full sun in the open ground. Stove plants —at least in the Middle and Southern States, do much better in the open air than people imagine. We saw, the past year, the common Banana growing as common as the Indian corn, though in exposed places the leaves would split somewhat by the wind. The Pampas Grass still stands unrivalled, as the most unique thing of its class for open air lawn decoration during summer and fall, while its silvery spikes make excellent parlor ornaments all winter following.

In regard to the more permanent occupants of the ground, we may add that wherever any part of a tree does not grow freely, pruning of such weak growth, at this season, will induce it to push more freely next year. All scars made by pruning off large branches, should be painted or tarred over, to keep out the rain. Many fruit trees become hollow, or fall into premature decay, from the rain penetrating through old saw cuts made in pruning. Also the branches should be cut close to the trunk, so that no dead stumps shall be produced on the tree, and bark will readily grow over. Many persons cut off branches of trees in midsummer, in order that the returning sap may speedily clothe the wound with new bark, but the loss of much foliage in summer injures the tree, and besides, painting the scar removes all danger of rotting at the wound.

Some judgment is required in pruning flowering shrubs, roses, etc., although it is usual to act as if it were one of the most common-place operations. One of the most clumsy of the hands is commonly set with a pair of sheers, and he goes through the whole place, clipping off everything indiscriminately. Distinction should be made between those flowering shrubs that make a vigorous growths and those which grow weakly; and between those which flower on the old wood of last year, and those which flower on the new growth of next season, as the effect of pruning is to force a strong and vigorous growth. Those specimens that already grow too strong to flower well, should be only lightly pruned; and, in the same individual, the weakest shoots should be cut in more severely than the stronger ones. Some things like the Mock Orange, Lilacs and others, flower on the wood of last year—to prune those much now, therefore, destroys the flowering; while such as Altheas, which flower on the young wood, cannot be too severely cut in, looking to that operation alone. We give below a full list of the shrubs in most common cultivation of the different classes.

Ornamental shrubs that flower chiefly from the wood of the preceding year: Snowy Mespilus, Dwarf Almond, the different kinds of Andromedas, Azaleas, Kalmias, Rhododendrons, Calycanthus, Corchorus, Cornelian Cherry, and the Dogwoods; Philadelphuses, Deutzias, Mezereon, Leatherwood, Fothergilla, Golden Bell, Hydrangeas, Itea Virginica, Jasmines, Privet, Upright Fly and Tartarian Honeysuckles, Pyrus japonica; the Missouri and other ornamental Currants; most of the early flowering Spiræas, Dwarf Pavias, Snow Berries, Guelder Rose, Wiegelia rosea, Persian and other Lilacs, Annual Roses.

Shrubs that flower from the present season's growth: Amorpha fruticosa, Ceanothus Americana, Bladder Senna, Coronillas, Burning Bushes, Genistas, Scotch Bloom, Althæa, Hypericums, such as Kalmianum, prolificum, etc., Green-fringe, Flowering Locusts, the Fall-flowering Spiræas, Tamarix, Vitex agniscastus, &c.

These lists also embrace the most desirable of ornamental shrubs in cultivation, from which the amateur may select when the planting season arrives.

COMMUNICATIONS.

NOTES ON IVIES.

BY SHIRLEY HIBBERD.

[*Editor of the London Gardener's Magazine.*]

In reducing the list of garden ivies to suit my "monograph," I cancelled no fewer than 135 so-called varieties, and then there remained 65, the whole of which I have described and figured. Although in the public interest I did this, I was careful not to destroy the plants recklessly, for I kept hundreds with their old names attached, in case of any further comparison being needed to justify my work, and also in case any I had discarded should ultimately prove worthy to be named and catalogued. In the course of five years, I have looked over them so often, that I should have detected the slighest variation from any of the accepted kinds, to an extent sufficient to make a substantial addition to the list, and I can find only three, one of which will, I am quite sure, prove to be the finest Helix in cultivation.

To buy ivies and plant them and enjoy them is easy enough; to raise new varieties, to compare and criticise those that are well known in gardens, and to sift and sort with eclectic intentions, is the slowest work a horticultural enthusiast can engage in.

Ivies are very slow to develop their true character, for some of them must be at least ten years old before you can safely assign them to the place they should have in any rational classification. Let me give you an example. Amongst some hundred seedlings I had fifteen years ago, I found one with neat smallish leaves of a deltoid form, and without lobes. It was grown into a nice specimen pyramid in a pot, with others—treated in the same manner. As time went on, the leaves became slightly three lobed; but they had a distinct character, and I gave it no place in my final selection. Four years ago, that plant was put out on a shady border, under a brick wall, and it quickly crept up the wall; and as it rose its character changed, and now it is the "Lobata Major" of my list. Now it must be understood that Lobata Major had been known in gardens any length of time before I selected the particular seedling, and my meaning is that it acquired so much the character of the variety so named, that it cannot be distinguished from it as it now clothes the wall, and yet the growth of the same plant which clothes the ground at the foot of the wall, presents small lobeless leaves like them that were produced when the plant was young.

If I want to insure plants of the Lobata Major type from head to foot, I must take cuttings from the strongly lobed growth on the wall; for strange to say, that will not revert to the lobeless form of the plant; but if I take cuttings from the shoots that lie on the ground, I will have to wait as before for the full development of the Lobata character. To one who sees little of nature, a fact of this sort is full of wonder and mystery; but to one who goes abroad, and uses eyes of observation, the wonder is less, although the mystery may remain.

There are many woodland districts in the mountainous parts of England, where the wild ivies spontaneously produce an immense variety of distinct forms of leafage, and amongst them we may find many that we have long had in cultivation, and that are usually regarded as products of the garden. It may be, indeed, that many of them are so; but nature unaided by man, has decked the rocks and the trees with ivy garlands as various as any we have obtained by selecting, cross breeding, and cultivating; and it takes the shine out of one to find in the savage wood, one of the very choicest of the so-called "garland ivies" towering to the top of our elm trees a hundred and fifty feet high, and embossing it with a growth that may represent a hundred and fifty years!

Four years ago I selected a seedling ivy from a batch that I had intended to destroy, because of their general lack of character. This one happened to present a vivid green leafage considerably in advance of all the rest, and I said "you're an early chap, you shall have a chance": so I planted it on a north wall—an old brick wall, rather damp: the very place for an ivy. It has grown with such vigor, that I think it would beat the Irish ivy in a race; and it will certainly beat all the green ivies in beauty and behavior. It trains itself as close as if it formed part of the wall, and spreads so regularly as to form a broad letter V, as true as if ruled; with knife and string used. But it is more decidedly precocious on the wall, than it was in the seed-beds

for in the bleak days of March, when there is not another new ivy leaf to be seen, this is comparatively covered with a new growth of the intensest green color, and this vivid hue it holds until midsummer, when it sobers down into a full deep green, and is then the neatest ivy in the garden, save and except my lovely "Marginata grandis," which grows on the same wall less rapidly and less regularly, but is so robust and self-sustaining and so superbly variegated, that I will not allow complete pre-eminence to the new comer. It is not at all unlikely, that many more young rejected seedlings would come out triumphs if they had the chance, but the "chance" implies a fortune in the first place, and more enthusiasm, perhaps, than would be compatible with riches. My named collection occupies a border fifty feet long, by fifteen feet wide, and that is no small proportion of my little garden; for I have about eighty sorts of hollies, and in fact collections of all kinds to find room for and take care of.

In course of various expeditions in search of ivies, I have had the good luck to find a vast number of extremely distinct and beautiful varieties. Alas! alas! alas! some of the wild ivies refused to be cultivated. I would not hope to be believed were I to tell the full story of my last ivy hunt, although I could go into court upon it, having as witnesses at my side my friends, Mr. Alfred and Mr. Edward Slocomb, who were sketching in North Wales when I was there last, and caught the hederomania from me and "went in" for ivies with a zeal that almost frightened me. We did search the Snowdon districts to be sure, and I sent home enough seedling plants and cuttings to make at least fifty new varieties; and when they were established in the garden, there must have been at least 2000 plants in all. The end of my selecting from this batch was that I found about six worthy of names and places; the rest had lost their character, and were of no value at all. To be sure they were ivies still, and good enough to plant out on a bank beside a woodland walk; but the lobes, the veins, the pustules, the blotches, the gold, the silver and the bronze, that characterized them as they grew in the damp woods of Snowdonia, disappeared after they had dwelt for a season in Stoke Newington; and they made a quiet, but impressive comment on Solomon's text: "There is nothing new under the sun!"

Probably many of your readers have seen Conway Castle. It is one of our North Wales' lions, and one of the finest ruins in this country. It is clothed with a grand growth of ivy, much of it richly variegated. The grand old walls of Conway tower (a grand old town it is: a splendid relic of feudality) are sparely decorated with wreaths of wild ivies, which are for the most part richly variegated. There is a hedge row leading out of the lawn to the open country, in which a very curious ivy grows, and this too is prettily variegated. Again in the grand pass that opens to the "Dry Valley," beyond Conway Mountain, there is a stone bridge covered with a lovely growth of variegated ivy. We secured samples of all these—and many more—and they were made into good plants, and carefully treated, and at the end of three years they were all common-looking green-leaved ivies, not worth (to me) the ground they occupied, and a burlesque upon the enthusiasm that had been wasted on them.

You must not suppose by my plain speaking that I have any quarrel with these plants or with the scheme of nature to which they were subordinate. I am stating facts that may be of some interest to somebody, and am describing disappointments that I have been accustomed to for thirty years past. I spent the best hours of three summers in systematic hybridizing of pelargoniums, and failed after all, to get the plant I wanted and had laid out my plans for. Thank God, we cannot have it our own way in these matters, for complete and unvarying success would, without doubt, drive us mad.

You ask me if I have "practiced systematic cross breeding of ivies?" No, I have not. If I had all my time to come over again, *of course* I should select my seed bearing and my pollen plants, and put a label to every flower operated on. I have, however, taken seed from choice varieties, as I could get it; and, as a rule, there is very little to be got. The variegated arborescent varieties flower freely, but they rarely ripen seed.

We have a fly called the Syrphus (I suspect you have him too) that industriously fertilizes the ivy flowers; and no doubt we are indebted in part to the Syrphus for the great quantities of black berries that the old bosses of green ivies produce. But such as we call "choice" ivies ripen but few berries, although when they flower, the flowers appear to be usually hermaphrodite, and the stamens bear promising pollen. I really think manipulation of these choice tree ivies would be repaid, and I would recommend any young friend of yours, who has a taste for the business, to plant for experimental purposes, the varieties described in my "Monograph," as Argentea major, Argentea minor, Luteola, Sublutea, Aurea (very shy to flower); Flava and Striata. They should be planted in a partially shaded spot to ensure a good growth, but not in deep shade, because the sunshine makes the fruit. They should be left alone for years, and be no more pruned than necessary to keep them even, and repress any gross shoots that threaten to spoil the contour. The pollen from these should be put on such neat green-leaved varieties as *Corrugated*, *Latifolia* and *Chrysocarpa*. A bookmaker would recommend "Lencocarpa," but I have yet to learn that such a plant exists.

Ivy will grow in any soil, and it is so hardy that it may be planted with safety in any garden in the British Islands, even in the extremest and bleakest of the Scottish Isles. But it is properly a Temperate Zone plant; it will not shirk or run far towards the Pole or the Equator, and the only soil in which it becomes a wanton and sportive and glorious weed, is the mountain limestone. I think if I were blindfolded, and carried away, and then set free, I should soon know the country I was in by the wild ivies; perhaps even by the garden ivies, if there were many such, so thoroughly local are the characteristics of the plant. On a cold clay my *Coriacea* ("Regneriana" of the books) grows slowly, and is sometimes killed back a few inches by winter frost. On a dry sandy or limestone soil it grows fast, and makes enormous leaves, and the severest frost never leaves a mark upon it. My *Cinerea* ("Himalaica" of the books) suffers every winter on the cold clay of Stoke Newington; but on the sandy soils of Cambridge, where the winter is actually more severe, it is unhurt in an average winter. This plant affords an interesting study. The young leaves are deeply, sharply and peculiarly lobed, but as they acquire maturity, the lobes disappear, and in winter there is not a sign of a lobe to be seen.

What wild ivies have you to boast of? There are two distinct forms of Hedera helix in English gardens, which amongst many other names, are occasionally labelled "*Pennsylvanica*." One of these is decidedly digitate, the lobes all point forward as the fingers of a hand do, and the basal outline is not indented where the insertion of the petiole occurs. This is also known as *Crenata*, and *Palmata*. It is the *Digitata* of my list, and I have given reasons for so naming it. This variety has leaves which attain a length and breadth of full three inches; they are of a fine dark green color, with conspicuous grey vines. The other "Pennsylvanica" is extremely small, with one long narrow projecting lobe in front, and two short side lobes, which occasionally throws out still shorter lobes on each side the petiole. This is blackish-green in the late days of summer, and purplish or brownish, or dirty bronzy in winter. It is *Minima* in my list, and may be found in the English nurseries variously labelled "Pennsylvanica," "Taurica" and "Donscrailense." It is quite common in the warm and moist mountainous woods in the western counties of England, and in all the warmer nooks of Wales, and is probably the "small sylvestran ivy" which Dr. J. D. Hooker describes, perhaps too hastily, as invariably sterile.

SEQUOIA (WELLINGTONIA) GIGANTEA.

BY MR. JAMES BARNES, BICTON, ENGLAND.

This magnificent mammoth tree, introduced into England from California by Messrs. Veitch's collector, Mr. Lobb, now about thirty years since, is now becoming a very interesting and grand tree in our landscapes throughout the United Kingdom, many of them from 40 to 60 feet high already, with a bole at near 2 feet from the ground, to 6 to 8 feet in circumference; branches most beautifully to the earth's surface. Most valuable on account of its evergreen, which it maintains in all seasons; quite hardy everywhere, and only gets a bit scared in very bleak exposed situations on the windward side, from northeast to southeast. It has coned freely for years; indeed quite young plants three to four years old and from 3 to 6 feet high, cone freely. But for some years I could not discern a plant with male catkins, and did not discover any till the plants reached the height of from 20 to 22 or 30 feet high, which was about ten or twelve years since. I lost no time after its discovery, which was on branches on the same tree that had cones on it, but separate branches I never saw, the cones and male catkins on one and the same branch. It was on a fine balmy, gentle breezy sunny day I first discovered the male catkins. Open they were, and full of golden pollen. Immediately fertilized some of the cones which were then much higher up on the tree; and it was soon perceivable which of the cones had received the pollen by their swelling and growing away from the abortive cones left

on the same branch unfertilized; thus I saved the first seed from which the first plants were raised from home produced seed in the United Kingdom. The male catkins of the Wellingtonia very much resemble, in size and color, some of the catkins of the strong growing Cupressus.

ROSE SLIPS KEPT DURING WINTER

BY MISS A. G., READING, PENNA.

An amateur of this city secures his slips in the fall, when they are more easily obtained. They are placed in boxes, in ordinary earth, and then put into a pit, where they are left for the winter. They sometimes take root in the fall, but most frequently in the spring, and then have the advantage of all the warm season for growth. If they are planted out, they become sufficiently strong by winter, to endure its cold.

Two ladies told me that they tried this plan, and found it successful. One of these, however, had hers in a hot bed, filled with horse manure, until just room enough was allowed for placing the pots of slips directly upon it. The pots were filled with sand. Boards were put over the glass (which had been previously covered with old carpet) to keep off the snow. It then remained undisturbed for the winter.

ON THE CLOSE PRUNING OF SHADE TREES.

BY DR. GEO. C. LAMBDEN.

(Read before the Germantown Horticultural Society.)

When I was requested at the last meeting of the Society to make some remarks upon the close pruning of shade trees, the mover of the resolution remarked that he would like to have the rest of the speech on the subject which I began last spring! But I cannot finish that speech. Mr. President, because it was begun when I was filled with an indignation which has had time to partly cool. Then the spectacle of those wretched tree trunks deprived of all their branches were fresh before me. I had been walking through the streets and beholding what had been trees, the shapely "work of God's hands, with their graceful curving limbs, and delicate twinery of branches and twigs, bare against the sky, now withered, their heads chopped off," their limbs severed asunder, nothing left to them but the naked unsightly trunks, with the hideous stumps reminding one of the sights about a hospital the time of the war. I thought constantly how much better it would be if the butchers would do with the trees as you have seen recommended to do with the vicious dog—"cut off his tail just behind the ears" they say. If these trees are so vicious as to be treated in such a manner, why not prune them off just above the ground?

Now, kind nature has partly clothed the naked stumps, and we are a little reconciled to the brooms which we have instead of trees, but when before long the leaves fall, some of us at heart will wish that we had the long swaying branches back in the streets instead of the many little shoots. But when February comes around again, all our protests will be forgotten. The saw and knife will come again into play, and the few trees we have left unpruned will follow the way of their companions.

Why do our gardeners adopt this savage style? I cannot tell. It seems to be peculiar to Germantown, for I have shown our stumps to many visitors, and all have exclaimed that they never saw anything so extraordinary! They said that they had seen branches shortened in when too long, or cut off entirely when deformed, just as you might cut off the extra toes or fingers, if your child had too many; but that it was no better way of making a tree than the cutting off of his legs and arms and head would be for making a complete boy! Now, this is really no exaggeration. A tree is a tree. If given a favorable place to grow in, it will almost infallibly turn out a graceful, beautiful object.

In gardens and ornamental plantations, where everything is more or less artificial, we are, of course, justified in pruning or forcing all growths to suit our requirements of shape or size. I am not speaking of them, but of ordinary shade trees. In them we often require a denser growth than they naturally make, and in such a case I do not object to an intelligent shortening of the limbs, which will promote a closer growth, and I dare say that in the streets, between the rows of houses, the branches may grow too high. If they are cut in when young they will hardly grow too tall, however, if they are not too close. The difficulty with us is that we plant too closely, as Mr. Kinnier showed at the last meeting, and when the shade becomes too dense we have not the courage to take out some of the trees bodily; we temporize and reduce the heads of all. Whenever trees are growing too thick I say cut down, root out as many as necessary to give the remainder a fair chance to develop,

prune them below instead of above, let the air circulate freely, and the shadow will be grateful instead of stifling. We dont want trees very close about a house.

A fine tree is of value; it is of far more value to the community than a fine house. The fine house can be built at any time, but who shall restore to us the great walnut, for instance, that stood in Walnut lane? Just because a drunken fellow ran against it one night, it had to be sacrificed. It was worth all the drunkards in Germantown. It was never close pruned, I venture to say. There is a suburb hickory in Hancock street, near Church lane, which I beg of you all to protect with your lives, when the destroyers come to destroy it.

It is said that silver maples require to be thus cut in, lest they be broken by storms. But we don't find it necessary to take down the upper stories of our houses to prevent them from being blown away, though I think our Mansards are less storm proof than our maples. I do not especially admire the silver maple, and if any one doubts that it will grow into a fine tree, I recommend him to look at the great one on Mr. Davis Baumann's premises.

The street on which I live had once the material for a fine avenue of maples. The trees were well established, and many of them very symmetrical. But they were too close. The street would not dry after a rain. If a common plan had been agreed upon by which each alternate tree would have been removed, we might by this time have had something to boast of. All of a sudden the householders grew impatient of the shade—some cut down all their trees, some cut off all the tops of theirs, some pruned theirs up from below. Some of the trees died under the operation, some are handsomely deformed, and there are great gaps with no trees. We never shall have an avenue.

How much wiser the people in Stockbridge, Mass., are! There they have an association, to which most of the inhabitants belong, for the planting of trees in the streets, and their subsequent care. The people all meet on the 4th of July on Laurel hill adjoining the town, and they decide where a tree is needed, or where there are too many. Every one is interested in the whole town, not alone in this little special plot.

I should like to have a special committee appointed by this Society, with instructions, to report what three trees are, on the whole, best suited for the streets of Germantown. I say three trees, for I always find that where a larger number is given to choose from an ignorant person feels no better than if entirely uninstructed.

I see no reason why Germantown should no have in time streets with avenues of trees, as glorious as those in New Haven, Northampton, Hadley, and many other New England towns, but we shall never get them until we show more intelligence on the subject, and especially unti. we give up the practice of close pruning.

THE PAST, THE PRESENT AND THE FUTURE.

BY WALTER ELDER, PHILA.

The past year has been an eventful one. Like many of its predecessors, when a derangement came upon our financial affairs, the husbandman was proven the guardian and rectifier of the nation. The *President* was applied to for a *cure*, but he could only point to the vast and valuable products of husbandry as a *real panacea*. Commerce put *steam* and *telegraph* in operation to bring the fruits of the husbandman to market, and thence across the Ocean, to supply the needs of people of other lands, for which money in abundance flowed in upon us, and still flows, to redeem our financial crises, and leave vast supplies in our favor. Had it not been for the immense products of our husbandry, the people of European nations would have famished for want, and our nation would have become bankrupt and disgraced. What man, or class of men among us, are equal to our virtuous and gallant yeoman of husbandry?

We favor encouragement to other branches of industry, for the exports of our minerals and manufactures have helped to swell the tide of prosperity in our favor. Husbandry should get encouragement also, by appropriating the public domains free to practical cultivators. A bold and gigantic enterprise was in progress, in the construction of a great highway through a vast wilderness, for the encouragement of the husbandman and mineralogist, which was put a stop to; but as our citizens know of no such word as *fail*, the *great railway* will yet be pushed through. The fertility of the soil, the richness of the minerals and the salubrity of the climate, will all tend to make that wilderness famous in wealth, and "blossom as the rose."

Much of the thickly settled portions of the country has been beautified by the skill and fine

taste of the ornamental gardener. Rough farm fields have been converted into gardens and pleasure grounds. Ornamental trees, shrubs and lesser flowers, have been judiciously set out; and verdant lawns have been seeded down for green carpets for the trees, and to luxuriate upon. Winding drives and paths have been made for travel through the grounds. The morning and evening rambles are made delightful, by the beauties and sweet odors of the embellishments.

RAPID POTTING.

BY PETER HENDERSON.

When Mr. Chitty tells us in the *Gardener's Monthly* for November how he spent his early years; how he was connected with one of "the largest establishments the world ever saw;" how he grew Heaths and Epacris in endless numbers; how he was too high in the horticultural social scale to pot Verbenas, and how he is now Superintendent of the Bellevue Nurseries, where "the plants can readily speak for themselves," I can well understand how he suspects *me* of wishing the public to know that I have "a good many plants to sell."

But it is not surprising that Mr. Chitty should thus interpret other peoples' motives, when he seems to be utterly ignorant of the force of language. He argues as to what the *assistants* did, how the *handling* for the potter was done, the *number* of men and boys who helped, and so forth, and then builds wonderfully on the foundation he lays. It must be evident to all that I might keep writing forever, and then not enlighten one of Mr. Chitty's suspicious nature and dull disposition. In order therefore to avoid any further controversy, let me repeat in brief what I have already said.

That this *one* man potted ten thousand rooted cuttings in ten consecutive hours. Had another filled the pots for him, as Mr. Chitty insinuates, or in any other way assisted, the work would have been done by two men and not by one. I may further repeat that the work was done in a satisfactory manner to me, who employed him.

I regret that my telling of what I thought so worthy of being told, has so disturbed the "Superintendent;" and I hope that I will not soon again make it necessary for one who was once employed in "the largest establishment the world ever saw," to question the powers of my Irish gardener.

A FREAK OF THE WHITE SALVIA.

BY W. L. AKERS, JOHNSTOWN, PA.

A White Salvia growing in this place has a branch bearing red flowers on a part of its side branches, and white ones on others. A few flowers on various parts of the plant are particolored. This indicates quite a disposition to return to its normal condition as a true Red Salvia. It is to be observed, however, that the white form is not such a vigorous grower as the red. Anyhow it isn't much of a thing, as the white is poor, and the flowers fall off very quickly.

THE OIDIUM ON THE GRAPE.

BY C. M. HOVEY, BOSTON, MASS.

Very recently, through the politeness of a friend, I read the very interesting book of Wm. Flagg, on the grape, and his very successful account of the numerous vineyards he visited in France, and the details as regards wine making, together with occasional hints upon collateral subjects, making up an interesting volume. Appended to the work is a translation of the entire pamphlet of M. Mares, which had just then (1868) been published, upon the remedy for the mildew, (oidium) and for the discovery of which, at the distribution of prizes at the Paris Exposition, he received, as Mr. Flagg says, "a medal and a smile."

Of course I should not think of occupying your valuable space, or trying the patience of your readers, by any remarks at this late day on the mildew; I only notice and to wonder why Mr. Flagg did not know more on a subject upon which he filled a volume; and why he did not, in his work, show the ignorance of Mr. Mares himself, of what had been done in curing the mildew years ago in this country.

"The disease of the vine, says Mr. Mares, was for the first time observed during the year 1845, on vines in a hothouse at Margate, in the southeast of England. It is, therefore, only thirteen years since its appearance has been well authenticated." This is probably true as regards the mildew in Europe.

But he further says: "It is in vain that the researches of the learned have sought a description or designation of that strange malady in the texts of ancient authors especially those of Theophrastus & Pling." And further, that "nothing authorizes us to infer tha these authors wanted to describe the disease now causing so much injury in old vines. Researches in *modern authors* have been no less barren." The italics are ours.

Now read what Mr. Robert Prince says in his most exhaustive and instructive work on the "Practice of the Vine," published *thirty-eight* years before Mr. Mares' pamphlet, both as regards mildew and its remedy.

"*Mildew.*—Much discourse has arisen as to the point whether this substance is of an animal or vegetable nature. But be it plant or animal, certain it is that *sulphur alone*, or a solution of sulphur and lime, will *totally* suppress it. The first mode adopted in using sulphur was to apply it in a *powdered state* to the bunches of fruit when they were wet, so that the moisture might cause it to adhere. This was found a *perfect remedy* for mildew or mould, without any ill effect, whatever, being produced in the grapes. The same application to the leaves of the plant is equally successful."

Mr. Prince says, "the introduction of the use of sulphur may be considered as forming a *new era* among us in the culture of foreign grapes;" and then he goes on to give a page or two of information as to the best means of using sulphur, with the old published remedy, which appeared every third or fourth year in the magazine of Horticulture, from 1835 to 1868, and details of experiments of Captain Smith of Newport, R. I., and others. Mr. Prince, who copied the remarks of Hon. Richard Peters, formerly president of the Pennsylvania Society for Promoting Agriculture, published years previously on the application of sulphur. Mr. Prince's volume appeared in 1830.

Mr. Prince may not be a "modern author;" but if Mr. Mares could find a more complete account of the disease of the vine, which plant appeared in Europe in 1845, (fifteen years later) and the precise way of applying sulphur adapted by Mr. Mares, except in using the bellows in place of a bag of muslin, we should be pleased to read it. That "medal and a smile" should have been bestowed on the late Mr. Prince, rather than Mr. Mares; and French authors as well as English will find some things in American books which are worth reading. It would have been highly gratifying if Mr. Prince would have said to Mr. Mares, when he visited at his vineyard at Montpellier: My dear sir, "your remedy for the vine disease is precisely the same as that given Mr. Prince, one of our earliest writers in vine culture forty years ago, which you will find given in detail in his valuable Treatise on the Vine, published in 1830. The sulphur remedy is as common and well know in America as the grape itself." Probably Mr. Flagg never heard of Mr. Prince's volume.

We have thought these few notes important—not only as showing the high value of the services of the late W. R. Prince to the progress of horticultural science, but in justice to his labors, and because it would appear from what Mr. Flagg says, we know nothing of the disease. On page 209, he says: "but mildew rot and redleaf,—in other words oidium—can be covered and kept down. It has been done *in Europe*, and here we can do it too." We should think so.

Why, Mr. Editor, you and I know that our crops of coldhouse grapes would often times be destroyed, had we not known years and years ago that sulphur would save them. And what would a crop of grapes be worth, covered with dry sulphur? Just nothing, to eat, although they might do for wine, with the juice expressed with muddy feet, probably to absorb the sulphur. How valuable, therefore, is the receipt originally, we believe, used by a gentleman of Charlestown, Mass.,—a clear limpid wash of lime and sulphur, by the means of which our grapes are perfect in growth, clean, sweet and eatable. Sulphur may be applied in various ways. It is a sovereign remedy. Without it we could neither have fine grapes nor beautiful vines, in winter. Mr. Mares' forty pages did not tell us how to do it.

NOTES FROM MICHIGAN.

BY. A. T. LINDERMAN, GRAND RAPIDS, MICH.

The Hills Chili peach is known here locally as Stanley's instead of Stareley's Late, as you have it in the November *Monthly*.

If C. J. R., of Richford, Tioga County, N. Y., will visit western Michigan, he will see, I firmly believe, results which will, after the result of his thirty years' study of horticulture, as to the value of plowing each year among fruit trees. In our light sandy soils is considered by our best and oldest peach growers, a positive necessity to plow in early spring, and to give frequent cultivation afterwards until September. At any rate the orchards in the immediate vicinity of South Haven, that have been plowed annually since setting, sent to Chicago one-fourth of all the peaches she had this year, at least such is the

judgment of her commission houses, I understand.

Orchardists here are deliberating seriously upon the best manner of battling the Codling moth; cloth, paper, or veneer bands, around the trunk of the tree to catch the larvæ, seem to be about as far as they have got yet. It seems to me that a good way would be to catch the moth full grown, as more or less people who have apples trees will neglect to catch the larvæ, and the moths they grow will devastate their neighbors' orchards. Some say the Codling moths will not be attracted by cans of sweetened water hung about the trees. I wonder if any one really knows that they won't?

The Iona was in disgrace at the American Pomological meeting, I see. On rather heavy soil, not too rich, well drained, I believe it succeeds here, although it does not always ripen. I would sooner have wine made from even unripe Ionas than from ripe Concords, Delawares, Clintons; (you may laugh) Catawbas either. I believe the constitution of many Iona vines was injured by the manner in which they were propagated when plants of the sort were scarce and high, and doubt if they and their progeny do not feel it yet.

About keeping winter apples, there is from two to four weeks of warm weather here after the fruit is ripe, and our cellars are not yet cold enough to receive it. I think these few weeks of warm weather take off as much or more time from the keeping of the fruit. I mean to put an ice house in connection with my cellar, and when the apples are ready to gather, cool the cellar by putting in tubs of ice and salt, until I get the temperature down to 34°, and keep it there by the same means as the warm barrels go in. I should like to know if any one has tried this way,—the success they had.

TREE PEDDLERS.

BY A RUSTIC.

It is a natural feeling to sympathize with the down-trodden and the oppressed; and as no one else lifts a lance in their behalf, I propose to say a word in favor of that much maligned class in the community called "Tree Peddlers." Nearly all the confusion in modern pomology, is laid at the door of this humble body of non-resistants.

A western lawyer once described a client of his, by saying that he never made a contract in his life that he did not sit down on the first log he came to, and consider how he could break it; and, from the obloquy heaped upon him, one would suppose that a tree peddler, after making a purchase, straightway sets to work to label the tree to suit his own interests. In Courts of Justice, where there is a doubt of guilt, the benefit of it is given to the accused, and, after some experience, the writer has a doubt if this wholesale accusation of tree peddlers is a just one They are doubtless, sometimes, culpable, and often victims rather than the doers of wrong.

One of this gentry, the other day, on being shown a lot of Iona vines, that the grower was willing to give away to any one that would take them, remarked, how many of those vines I have sold in the Susquehanna region at $5.00 a piece. It always, he added, went against my heart and conscience, but I only executed the requirements of my employer. That abundance of errors occur through some agency is very apparent; but many a horticulturist (who has treasured up unpleasant memories at the transaction between planting and fruit bearing of the varieties ordered) will smile grimly when he is told "to buy only of dealers of established reputation." Do not the published writings of these reputable dealers show that, when they have imported "this" a popular *novelty*, it turns out to be an old time "that." And before the discovery is made, how wide spread by dissemination has the error become. This saddles part of the accountability for errors on our European cousins; but if, in addition to this, the tree peddler does not find wrong labels on the trees he gets from "respectable" home nurseries, he will have better luck than orchadists in general.

An oriental monarch is said to have declared that all wrong or evil, if probed to the bottom, would be found to have originated from a woman. In keeping with this philosophy, a propagator of vines assigned to a customer as a reason for the blunders at his establishment, that the women visitors, with their long skirts, jerked the dividing stakes containing the names of the varieties out of the ground, and then benevolently stuck them in hap hazard to the abject confusion of all true nomenclatures in the vinery!

As the Paris maidens now wear short skirts, it is hoped that Mrs. Stanton will come to the relief of order seeking gardeners by inaugurating such a desirable reform in America. Experience has shown that "accidents will happen in the best regulated families," and, as there is much of unintentional blundering in pomology; and what of wickedness there is, may be aboriginal in its character, I propose that a lapel of the mantle of charity be extended to those much execrated Pariahs, the "tree peddlers."

LIST OF TROPICAL AND SUB-TROPICAL ORCHIDS,

Blooming at various seasons during the Autumn, Winter, and early Spring; or say from October to March, and in a few instances later.

BY J. MAC P.

These are mostly of the most beautiful and useful kind, such as a florist might desire.

Winter blooming tropical Orchids 60°, 65° to 90°.

Ærides	quinquevulnerum
Angræcun	eburneum
	sesquipedale
Ansellia	Africana
	gigantea
Burlingtonia	decora
	candida
Calanthe	vestita
Camarotis	purpurea
Cymbidium	eburneum
	Mastersii
Miltonia	candida
	c. grandiflora
	Clowesii
	Moreliana
Oncidium	Cavendishiana
	flexuosum
	leucochilum
	ornithorinchum
Oncidium	papilio
	sarcodes
Phaius	grandifolius
	maculatus
	Wallichii
Phalænopsis	amabilis
	grandiflora
	Lowii
	Luddemannia
	Parishii
	rosea
	Schilleriana
Saccolabium	violaceum
	v. Harrissoniæ
Vanda	cærulea
	cristata
	Dennissoniana
	gigantea
	insignis
	Roxburghii
	suavis

Winter blooming sub-tropical 40°, 50° to 70°.

Ada	aurantiaca
Anguloa	Clowesii
Barkeria	Lindleyana
Brassavola	Digbyana
	glauca
Burlingtonia	venusta
Cattleya	amethystoglossa
	bicolor
	bulbosa
	guttata
	Harrissoniæ
	violaceæ
	intermedia
	labiata
	marginata
	Mossiæ
	Trianæ
	Warscewiczii
	delicata
Chysis	aurea
	lævis
Cœlogyne	cristata
	gardenriana
Cypripedium	barbatum
	caudatum
	Fairreana
	hirsutissimum
	insigne
	niveum
	venustum
Dendrobium	aggregatum majus
	anosmum
	bigibbum
	chrysanthum
	chrysotoxum
	cretaceum
	Dayanun
	densiflorum
	densiflorum album
	Farmerii
	fimbriatum
	formosum
	Fytcheanun
	Gibsonii
	lasioglossum
	lituiflorum
	luteolum
	moniliforme
	nobile
	n. pendulum
	n. Wallichianum
	nodatum

Dendrobium	Periardii
	speciosum
	Wardiamun
Dendrochilum	glumaceum
Disa	grandiflora
Epidendrum	aurantiacum
	dichromum amabile
	Skinnerii
Ionopsis	paniculata
Laelia	accuminata
	— violacea
	albida
	anceps
	autumnalis
Lœlia	Brysiana
	cinnabarina
	elegans
	purpuracea
	majalis
	Perrini
	purpurata
	superbiens
Leptotes	bicolor
Lycaste	Skinnerii
	Harrissonæ
	lanipes
Maxillaria	venusta
Odontoglossum	Alexandra
	Bluntii
	Cervantesii
	Insleayii
	membranaceum
	nivium
	Phalænopsis
	pulchellum
	Rossa
	triumphant
Odontoglossum	Uro-Skinnerii
Pleione	humilis
	Lagenaria
	maculata
	præcox
	Wallichiana
Sophronitis	grandiflora
	violacea
Trichopilia	suavis
	tortilis
Zygopetalon	Mackayii
	crinitum cæruleum
	rostratum

THE BEGONIA.

BY MR. JOHN QUILL, GARDENER TO THE CINCINNATI HOSPITAL.

The Begonia is a favorite plant with a great many of our amiable American ladies. In conservatory and window garden it is classed as a pet among their other favorite flowers. And well it deserves being looked upon thus favorably, for its varied rich foliage and prolific buds, and blossoms, speak for themselves indeed.

But the Begonias have their own peculiarities; they require a moderate temperature, and protection from the strong rays of the sun. Smoke, gas and soot are extremely hurtful; and they are too often killed with kindness. We find it quite difficult to keep this family of plants in a healthy condition in winter, when confined in the greenhouses of our cities, where gas and smoke make the atmosphere so impure. But this could be remedied by placing a pan of water near the plants, so that the water may attract a large portion of the foul gases that would surely be death to the plants.

Some species of this plant lie dormant during a portion of the winter. When affected by impure atmosphere or ill treatment, the bloom, leaf and stem, die down to the very roots. Many people not acquainted with the true nature of this plant—see it thus wither—think it worthless, and directly consign it to the rubbish heap.

In the fall of '72 I had a few plants of this kind in a unhealthy situation,—the result was that the foliage and stem withered totally. On examining the roots I found the tuberous like little fibers to be fresh and healthy. I was aware that the proper thing to be done was to divide and re-pot them. But not having enough room, and being inclined to try a little experiment, I made a bed of sandy loam, under the propagating stage, where there was moisture, heat and darkness. Now I took the roots from the pots, rubbed them well between my hands, and sowed them in the prepared bed as if sowing seed, covering them with an inch or two of soil, pressing it gently. In this condition I left them, giving them little or no water, except what the moisture of the house afforded them.

The species thus treated were B. Hybrida, Multiflora and B. Bolivensis. The result was very pleasing indeed two months after. This dark, warm bed was a perfect little forest of Begonias. I experienced some difficulty in hardening the plants to the light and sun. They all, with a few exceptions, bloomed the coming fall, and will continue their bloom far into the winter. This is the quickest and most successful mode of increasing the plant that I know of. I fear that

"Henderson's" style of rapid potting would not succeed in this case. I have been a believer in the old proverb of "slow, but strictly sure," yet all credit to the young Irishman who does his work "fast and sure," and all honor to his employer, who recognizes the true worth of a good man.

GROWING LANTANAS.

BY AMATEUR.

If no one among your many readers have ever grown Lantanas in tree form, let them try it, and I do not think they will regret the little extra trouble it takes to do so. I had two plants so grown the past summer, and two more beautiful and striking objects it would be difficult to find among common plants. The cuttings were struck last fall; and as they grew, all auxiliary buds were removed, allowing only the leading shoots to grow until they attained a height of six feet. They were then permitted to branch freely. Planted out in May, and with an occasional pinching, by September they were very fine specimens. In place of the usual low scraggy bushes, were two handsome little trees fairly loaded with flowers, and occupying much less room than Lantanas usually do. This treatment seemed to check the disposition to throw out supernumerary buds so characteristic of the Lantana. The *Monthly*, having so many able professional gardeners among its contributors, this article may be doomed to the waste paper-basket; but if the experiment has not been tried, I shall feel grateful if my suggestion meets any approval. Would not plants so grown in pots make fine exhibition specimens? I mean to try. [Thanks. Just the hints we like.—ED.]

EDITORIAL.

TRAVELING RECOLLECTIONS.—No. 3.

Whoever visits Cincinnati and is a lover of art, should see the Probasco fountain, erected at the expense of a generous citizen of that name in one of the public squares. It was one of the premium works of art at the Paris Exposition, and purchased by Mr. Probasco, as a gift to his fellow-citizens. It is regarded by cultivated people as among the most tasteful works of art in the world. All the ornaments are in themselves complete, representing various phases of humanity, in which water plays an important part. Our party had arranged only to lay over here a few hours to rest, on this occasion, but the temptation to break in on the hour of repose for the purpose of a visit to this delightful work of art, could not be resisted, and was not regretted by any means.

As our main object after leaving Virginia was to get to Texas, we took the shortest and most direct route to St. Louis—the Ohio and Mississippi Railroad, stopping in St. Louis only long enough to make a rapid visit to Mr. Shaw's Missouri Botanical Gardens—a pleasure spot which, no matter how great may be the desire to push on elsewhere, no one can resist the temptation to delay a little, in order to visit. The Gardens are kept up as formerly in the highest style of beauty, with something new to attract in every visit. It must be a source of gratification to Mr. Shaw to note that, besides the pleasure he is conferring on thousands by freely opening to their inspection and enjoyment this beautiful place, his example is improving the horticultural taste of the whole city. In the garden taste of the wealthier establishments, St. Louis is progressing fast. We can well remember on our first visit to St. Louis, how the absence of horticultural adornments for so great a city painfully struck us, and the contrast now was therefore particularly pleasing.

To get to Texas we take the Missouri Pacific Railroad due west to Jefferson City, where the river makes a bend northward and leaves us, while we keep on west to Sedalia, where we breakfast, and then take the Kansas Pacific southwesterly for the great Lone Star State. In due course we reached Dallas, having in our journeyings already wandered three thousand miles from home.

The first thing which strikes the horticulturist as he leaves the cars at this Texan town, is the use of the pride of China, Melia Azederac, as a shade tree. The leaves are not unlike those of

the *Kolreuteria* in form, only much larger, and they densely produced in great abundance. Near the station one had been sheared into a large round head, and had a very unique appearance. The shade is very agreeable during the summer heat, which, however, was not as intolerable as we expected. The thermometer was but 85° on our arrival, the next day 96°. Indeed, it seemed about the same as the summer heat of Philadelphia, except that here the nights are perhaps cooler, and the heated term not so long. There was very little gardening, as we understand it, at the north, though fruit trees were tolerably abundant, and seemed to thrive very well. At the hotels and private houses vegetables and dairy products were rather scarce and high-priced, and we should judge there would be a capital opening in these Texan towns for fruit and market gardeners. The soil is excellent, and everything well adapted to enterprises of this kind. The people have not much means, as we find generally the case in the South at the present time, but they are remarkably free and generous in spending money, and horticultural operations would, no doubt, be as well supported as in any town north. There is very little frost here, sometimes an inch or so; the ice used for domestic purposes is brought chiefly from Kansas. Northern men, who have been used to look at public schools and the use of intoxicating beverages in a peculiar way, will find here a good field for missionary enterprise; but they will find the temper of these people not as much opposed to progress in these directions as some newspaper reports have led many to believe. Most people when they leave home expect to find things different from what they have been accustomed to. They will find no more of this character to contend with than in any other new part that they may go to. The soil of this part of Texas is very black and rich, and in many places lies on a bed of rich limestone. The native grasses are very luxuriant, and where the land was under culture, corn and cotton appeared very productive. Cotton is one of the most productive crops, but one to do well with it must have at command a steady and never-failing supply of labor. It requires continuous hand-hoeing in the earlier stages, or it will be crowded out by heavy weeds; and by the time this is over the cotton has to be gathered boll by boll by hand, as it from time to time matures. Very little machinery has been brought to bear on cotton raising as it has been on most other farm crops, and manual labor is the great reliance.

We saw few grapes in cultivation, but they will, no doubt, do well here, as several wild species abound. *Vitis candicans*, a Southern species was particularly abundant, and could be detected a long distance away by the silvery whiteness of its webby leaves.

The Post Oak trees are of enormous size, and the leaves a little different from those we meet with in the North, and may excuse Mr. Buckley for his attempt to make a new species of them; but after seeing them in so many other parts of the Union, one cannot but conclude that there are only local differences and but one species. Mr. Buckley's views in regard to the Southern form of Ampelopsis Virginica, we can readily endorse, after seeing the plant in a wild state. The trifoliate leaves are not among its sole characters. They have a thick texture similar to the Hoya carnosa or wax plant. We hope to see this get into cultivation. It is a very ornamental species. Dallas is the crossing place of the Southern Pacific Railroad, which is being made due west from here to California, going through a region free from winter snows, it ought to be a popular line of travel.

Going north from Dallas toward the Indian Territory, we pass through large tracts of low woodland, made up in a great measure of Osage orange and Celtis occidentalis. The former goes here universally by its French name of Bois d'Arc, or bow wood from its use. It does not seem, in the districts through which we passed, to grow larger than our ordinary apple trees, but there must be larger trees, as in the lumber yards plank from the Bois d'Arc is common. It is easily known by its saffron yellow color. The nettle trees (Celtis) are no doubt the same as the northern trees, although by many thought to be of a different species. All along the line to Sherman, a thriving town, and Dennison, also thriving as wonderfully for its age as any of the thrifty western towns, we pass through a rather level country, with a rich understratum of white and blue limestone, one hundred miles to the Red river, which is the boundary line between the Indian Territory and Northern Texas. The line was very gay with the large purple brush-like heads of *Centaurea Americana*, a beautiful annual, which it is surprising has not yet got into cultivation. The Red river, at this crossing, is by no means picturesque. It had a dirty canal-like appearance, sluggish, and uninviting in every way, but it has another reputation from those who have seen it in its angry moods. The crossing here is into the country occupied by the Chickasaw Indians, and west of us the Red river runs from a country little known to civilized man. A hundred miles west of us is Fort Sill, in the heart of the Camanches, Kiawa, and Apache savages, and even the naturalists of our party, venturesome as most of this class are, exhibited little desire to explore the great facts of nature among these wretched specimens of mankind.

The part of the Indian Territory through which the Kansas Pacific Railroad passes, is occupied by semi-civilized races. We pass on the route to Southern Kansas, a little way into the Chickasaw country, then through the centre of the Choctaw, the Creek, and the Cherokee nations, some two hundred and sixty miles. The Indians do not seem particularly industrious, chiefly because they have not learned the wants of the white man. Many of them were mowing and making hay on the prairies, using our improved mowers in their work. Most of them have mere huts for dwellings, but in some instances their habitations were made as the white man's are, and quite as good as some of our well-to-do mechanics have them. The country is an inexpressibly beautiful one. Before seeing it we had heard its praises sounded, but supposed there was a little in the estimation of the spirit which covets this national reservation to the Indians. But as the Ancients said of another affair, the half was not told to us. It was almost too hot, however, for the writer to covet much of it. Before the two hundred and sixty miles had been traversed, his white skin had peeled, and in huge flakes fell off and was left behind him, and he would have passed among a tribe not over-suspicious, as an ordinary red man in tolerably good standing. The woods in the territory are chiefly of oak and Pecan nut. The nettle tree, however, plays an important part, but instead of the low spreading heads of Texas, here it runs up very slender and lofty, with a graceful elm-like habit, very similar to the form known as Sugar berry in the woods of Indiana. The country is remarkably well watered. Near the centre we cross numerous rivers, the Canadian, the Verdigris, the Neosha, which all unite just about there to form the great Arkansas river. The white man need hardly envy the poor Indian this beautiful country, for it will be his some day. It is evident that no matter how civilized the Indians may attempt to become, they will not last long.

After all any one in love with this beauteous land, has Southern Kansas, which is really a part of the same thing, the tracts of country between the Verdigris and the Neosha, running for over a hundred miles into the Kansas territory. Our railroad took us along the line of the Neosha river, through a magnificently undulating country, with deep black soil, resulting in trees and farm-crops of that deep green color which always follows the highest health. Wal nut trees and oaks in many places grow to majestic sizes, and the number of well-cultivated farms showed how rapidly the land was being all taken up. The school-house and the factory meet us everywhere. Neosha Falls has considerable manufacturing interests. Approaching Burlington, the road winds round what might be almost called hills, seemingly ascending a steep grade, when all at once we come on the beautiful city of Burlington, with its white spires and substantial looking buildings, surrounded on every side by fruit orchards, gardens, and fruit trees. But we were on for the far, far west, and the insensate locomotive steamed through even this field of beauty as sullenly as if it hated that those it drew should enjoy it, even for a few passing moments. At Junction City we took the cars of the Kansas Pacific for Denver. Along the line we stopped at various points noting the wonderful prosperity in the two years since a few of us passed over before, taking in the various details of Mr. Elliott's successful tree planting experiments, and so on, till we reached the capital of Colorado, where our journey proper begins.

OUR CORRESPONDENTS.

At times, when reading in English horticultural magazines the immense amount of interesting matter freely contributed to the great cause, and which has been the great means of making English horticulture the great power it is to-day, we have wondered whether the time would ever come when American horticulture would ever be blessed by the same true love. This issue of the *Monthly* gives us hope. So many distinguished names, as well as matter from less known but not less valued contributors, have never appeared in one number before.

EDITORIAL NOTES.

DOMESTIC.

Entomology in the United States.—One of the most surprising features of the late meeting of the American Association at Portland, was the large number of entomologists drawn together. They far exceeded in numbers the votaries of any other branch; and their presence was so well appreciated, that the Association formed a separate section for the discussion of entomological topics.

Dr. John Le Conte, who, by the way, has been chosen to fill the honorable position of President of the Association for the next year, addressed the meeting "on the promotion of economic entomology in the United States," which address is given in full in the December number of the *American Naturalist*. Dr. Le Conte gives a brief history of practical entomology as distinct from mere species-making, giving due credit to Harris, Fitch, Walsh, Riley, Packard and others, and regrets that no opportunity has been afforded the laborious Townsend Glover to make his great life-work tell among the illustrious number, and after showing the immense interests involved, and the national duty in the matter, sums up his addressed with a recapitulation as follows:

1. Reorganization of the Department of Agriculture, on a scientific basis, for the proper protection and advancement of agricultural interests

2. Preparation of lists of the most destructive insect pests, with condensed notes of what is now known concerning them, that attention may be directed specially to those investigations necessary to complete our knowledge.

3. Co-ordination and co-operation of state entomologists with the chief of the Department of Agriculture, that they may work harmoniously and intelligently in concert, and thus avoid the waste of labor now resulting from duplicate observations and repetitions in publication: collateral to this, the publication each year of a brief report, containing such important advances made in the science, both at home and abroad, as should be made known to the farmers.

4. Accurate calendars to be prepared of the appearance, disappearance and other phenomena of the history of the most injurious insects in different parts of the country.

5. Contrivance of apparatus on a large scale, by which, with the least expenditure of material and labor, the nocturnal species may be attracted by light, and dropped into a vessel containing cyanide of potassium or other poisonous substance.

6. Experiments on the effects of poisons upon the species, the habits of which permit the wholesale applications of such means of destruction: especially adapted to nocturnal lepidoptera by the process known as sugaring for moths.

7. Careful study of epidemic disease of insects, especially those of a fungoid nature: and experiments on the most effective means of introducing and communicating such diseases at pleasure.

8. The preparation by our best instructed entomologists working in concert, of one or more elementary books suitable for use in schools, giving in a compendious form the general principles of the science, and indications for applying the knowledge to practical results.

9. The appointment in agricultural colleges of competent professors of entomology, who have been trained in a scientific school, to fit them for the duty of instruction.

10. The establishment of the means of compensation for compulsory or voluntary destruction of crops infected by formidable pests, as above mentioned.

Fungi in Hawthorns.—We are indebted to the kindness of Mr. Thomas Taylor, microscopist to the Department of Agriculture, for a corrected copy of his Hawthorn article in the report. In England, Greville, the Scottish botanist, and Mr. A. Cooke, say *Roestelia lacerata* abounds on the Hawthorn. Mr. Taylor finds it on the leaves only of American species. European authors, Mr. T. says, do not seem to be aware that any other fungus but Roestelia lacerata feeds on the Hawthorn; but he says he found another species this year—an Æcidium—but which species it is he does not state.

Mr. T. speaks of the Cratægus pyracantha, as the "Washington Evergreen Hawthorn." The Washington Hawthorn is Cratægus cordata, and the C. pyracantha is known simply as the Evergreen Thorn.

Morning Glory.—The English no doubt often see things in American papers which excite a smile; and we, in our turn, may be pardoned for an occasional good-natured laugh. Recently a writer in one of their papers made the astounding discovery that the "Americans had *just* named the Convolvulus 'Morning Glory.'" He thought it would be more in keeping with the character of the plant to call it "All Day Glory," as it is open all day there. It is very funny that we should only just have named the Morning Glory,—and because under the clouded sky of England the plant should remain open all day, is quite a sufficient reason with this little islander that it should do the same all over the world.

About Premiums.—There is a sharp discussion in some of the Horticultural Societies of France, as to whether it is right to award premiums to the merchants in competition with the growers—to others than to bonafide raisers. It would generally be answered not; and yet we often see fruit collected by *States* in competion with individual fruits at some of our own exhibitions. A bad rule may creep in unnoticed.

New Weeping Trees.—The English papers report a weeping Filbert, and a weeping English Walnut, as among the most recent of new weeping trees.

Change in the Color of a Rose.—A correspondent of the *Gardener's Chronicle* reports a branch of Gloire de Dijon rose, that produced *pink flowers*. The branch has been propagated from in the hope of retaining it. The American Isabella Sprunt came from Saffrano in this way.

Grapes not Setting Well.—Mr. Fowler, of Castle Kennedy, in *Florist and Pomologist*, thinks that deficiency in the general health of the vine is the cause of grapes not setting well, and that a permanent remedy can only be had by invigorating the whole general system.

Pinus insignis.—This remarkably beautiful pine, from Lower California, is not hardy in the north and middle states of the Union. In England, where it is hardy, it has been found an admirable sea-coast tree, a hint by which our southern readers may profit.

Growing Apricots.—In a turnpike road, Mr. A. Cramb says in the *Pomologist*, that the intelligent gardeners who grow their Apricots in good deep, rich, loose garden soil have little success; while the neighboring cottagers who grow theirs in ground trodden as hard as a turnpike road, have wonderful success.

Insects Injurious to the Strrwberry.—That admirable serial, the *American Naturalist*, in the September of last year, has a full chapter (with illustrations) on the insects injurious to the strawberry, by A. L Packard, Jr.

Buffalo Grass.—Much confusion exists among writers as to what is the Buffalo Grass. Indeed we have seen figures of the "Buffalo Grass" which represented different things. We have now before us the *Western Planter* of Kansas city, of December 3, which gives a correct wood cut of it, exhibiting in the illustration both the male and the female spikes of flowers; for it is one of the few grasses which have this division of the sexes.

The Buffalo Grass, *Buchloa dactyloides*, is a very low creeping grass, which seldom rises more than six inches, and usually not more than two or three from the ground. Wherever coarse herbage grows unchecked, it crowds out the small "Buffalo Grass," thus beautifully illustrating Mr. Darwin's principle of the "struggle for life" in his theory of natural selection. The Buffalo Grass has disappeared from millions of acres in the west, since the vast herds of buffalo have disappeared. They grazed out and tramped out the coarse grasses, and thus gave the Buffalo Grass a chance, just as the introduction of lawn mowers has filled our lawns with little weeds which never troubled us before. The baffalo got very fat on the little Buffalo Grass, while the buffalo itself afforded the conditions necessary for the grass to grow. With the disappearance of the buffalo, now near at hand, the Buffalo Grass will probably die out also.

The Ivy.—Properly so called, or rather as the popular mind understands it, is wholy confined to the temperate parts of the Old World—chiefly Europe. *Hederas* are found in the West India Islands, Mexico, Brazil, and also in the more tropical parts of Asia; but they much more resemble *Aralias* than ivies of the type of *Hedera Helix*. Nothing that could come under the popular idea of an ivy, grows in the United States; and what is called *Pennsylvanica*, in Mr. Hibberd's interesting letter, must be a misnomer so far as locality is concerned.

Our readers who have been in Europe will share in Mr. Hibberd's enthusiasm for the ivy; and those who from the little they know of it, by greenhouse and room culture, and once in a while open culture, will know enough to enter fully into its lively spirit.

About Philadelphia it will live out in winter when not too fully exposed to the sun, under the lowest winter temperatures. At Boston it lives out in no aspect. The Irish and the English are the only two in general use. In these two it has been found here that, though the flowers seem to have perfect organs in both sexes in each flower, the one or the other is inoperative. The plants are practically Monœcious.

Economising Waste Heat.—Just now the exciting topic among English Horticulturists, is the plan of Mr. Cowan, who puts a hot water boiler on the top of a lime-kiln, and thus warms

greenhouses by heat which otherwise would be wasted. He warms seven to ten thousand feet in this way, and then sells the lime to pay for the coal.

Centennial Exhibition—Horticultural Branch.—The celebrated English Rhododendron grower, Waterer of Bagshot, will send from England a display of Rhododendrons for the occasion. The English have a special agent in Philadelphia to look after their interests, and our people will have to perfect their local organizations, or they will be left out in the cold at their own door.

OBITUARY.

PROF. LOUIS AGASSIZ.

Among the deaths of the month American science suffers a heavy loss in Professor Louis Agassiz. Any especial account of his life or his labors will be unnecessary here, as every paper in the land has already made the whole people aware of what and who he was, though even this was hardly necessary, for no man had entered so closely in the every-day life of the people as Agassiz. He had the rare faculty in a scientific man, of knowing how to reach the popular heart. His commanding presence, his great learning, his excellent voice, and happy manner of expressing his thoughts, together with his thorough originality, made him remarkably well adapted for a popular leader. We know of no one who can well succeed him. With his co-laborers in science he was not as popular as with the general public. He had his own principles, in which he so firmly believed, as to make him impatient of any suggestions which ran counter to them. And yet his stores of knowledge were so vast, that even in opposition his resources were powerful, though not always effective. The writer of this notice addressed the American Association at Salem, Mass., detailing the observations he had made, leading him to the belief that he had discovered the laws which governed the production of the sexes in plants. In connection with this subject, he had noted that whenever floral organs normally colorless, or of pale color, took on deeper tints, there was a corresponding tendency towards sterility, or disturbance in the reproductive organs. At the conclusion of his remarks, Prof. Agassiz took the floor, criticising the whole paper, and in regard to the color question, remarked that among Scrophulariaceous plants, high colored bracts were among the most common of vegetable phenomena, and yet these were among the most productive of seeds as a general rule, of all the plants in the vegetable kingdom. The writer had simply known Prof. Agassiz as a Zoologist, and was rather taken aback by this illustration of Agassiz' ready knowledge of botany also, so great as to seem so effective against him. He could only make a few brief remarks in reply, showing, however, no disposition to continue the debate with so powerful an opponent. Agassiz did not rest satisfied with this easy victory, but proceeded to descant on the dangers of young scientists theorizing on such great subjects, especially such a one as this, and in the present state of the public mind on a related subject. This brought out Prof. John L. Russell, who reminded Prof. Agassiz that Scrophulariaceous plants were proverbial for aborting their stamens, as well as for seeding abundantly, thus favoring the view of the subject as presented instead of opposing it, and he "supposed that the 'related' subject was the woman's rights question. But should Mr. Meehan's views ever prevail so far as to be carried into the animal world, we should only have to change the titles of our scientific papers. It would be 'on the antiquity of woman instead of the antiquity of man.' But the Professor need not fear, for such a discussion would die out on the threshold. We could not tell the ages of living women, and as to those of the past he was sure the antiquity of women would never be known." On our way from the meeting, Prof. Rnssell referred to his part in the debate, and with tears falling down his aged cheeks, expressed his sorrow at the apparent harshness of his remarks against the Professor, and yet excusing himself at the same time on the ground of his earnest desire to see justice done to me.

In the evening the writer met Agassiz again at the residence of Dr. Loring, and the Professor at once apologized for what might seem an unnecessary harshness in his morning remarks.

"It was not your facts I objected to," he said, "they were quite novel and highly interesting to me in the relation in which you placed them. I listened to you with pleasure, and you deserve credit for bringing them forward. But young men are so apt to generalize too far from too few facts, and it was against this, in all kindness, I wished to caution you."

And the kindness was felt, and is to this day, equally so with that of the other great man, whose name we have mentioned, and who has also passed away.

We recall these occurrences now, because we think they illustrate Prof. Agassiz' general character remarkably well. He was not above discussing matters of science with those whom some would term the humblest, when there were any positive facts to build an argument on. He was always willing and ready to contribute on any occasion to the common interests of a meeting, so far as he was able. He was impulsive and quick, and yet warm-hearted and generous, on the suspicion of a wrong on his part. He knew, what it is to be regretted, more scientific men do not feel, that theories to be worthy of the name of science, should be supported by facts so clear, that the cause and effect should be indisputably connected, and though it was the writer's fate to come under his adverse criticism, he feels thankful, feeling how much the caution has been of service to him.

HENRY A. DREER.

Most of our leading seed firms have each their special features, by which they have made themselves known to a large circle. In flower seeds our readers have become so familiar with the names of Bliss, Vick, and Dreer, and their names and flower culture seem so inseparably bound together, that we hardly feel their death to be a possible thing. And when, just as we were closing this page for the month, the death of Dreer was announced, it seemed as if it could scarcely be real. The announcement of his decease on the 21st of December will carry regret to many a distant home in this country, where his efforts have contributed so much to beautify and adorn. He was comparatively young—fifty-six—but succumbed to a nervous affection of the heart. He was in early life a cabinet maker, and noted for the thorough manner in which he did all the work entrusted to him. Always fond of flowers, he was hardly twenty-one before he went into the florist's business, first in a very small way near Front and Chestnut Streets, in Philadelphia. His business grew every year larger, till a few years ago he entered the present fine store at Seventh and Chestnut Streets. He was among the first to take advantage of the mail in sending seeds and plants, even before the rates were lowered to encourage the practice. An excellent trait in our deceased friend was his liberality in all matters of public interest and for the general good of the community. It has fallen to the lot of the writer to have to ask his aid in subscriptions to these purposes when the occasions occurred, and he always lent a willing hand, and generally to an extent which has surprised by its liberality; and this too, often when no left hand had any chance to know what the right hand was doing; and when, too, the profits of business could not be overwhelmingly large Such men are all too few in this world, and we especially are sorry to miss them from our circle.

At this moment of going to press, we do not know of course what effect it will have on the immense business he built up, and of which he felt so proud; but the members of his family have always taken pride in it, and we hope and believe it will be still continued.

SCRAPS AND QUERIES.

NAMES OF PLANTS.—*L. B. C., Richmond, Indiana*, writes: "After waiting so long a time I to-day forward a leaf and flower of the Begonia (No. 1, page 308, October number *Monthly*), and a leaf of Begonia No. 2, same letter. I have been very anxious to send a flower of Begonia No. 2, but it has not yet bloomed. The leaves enclosed are characteristic of the leaves of each plant, none varying much from these.

When at Cincinnati to the Exposition last September, I saw at Mr. Underwood's display of plants a plant similar to No. 2 (Hanover Plant), and the gardener told me the name was Feastii (Begonia). This was after I sent you the first letter, and perhaps if I had not sent the letter, I should have taken the name for my plant.

"Will you be kind enough to give me the name of the Aloe accompanying this?

[No. 1 is Begonia sanguinea, No. 2 B. Feastii, the Aloe A. lingua.]

FRUIT NOTES FROM MT. PULASKI, ILL.—*J. C.* writes: "We have no peaches this year, in fact, very little fruit of any kind—even apples, although the trees were generally very full of bloom, are almost an entire failure. The Raspberry crop is about the only exception to a general failure, and we are impressed more each year with the importance of this fruit. The Black Caps have never failed with us; we may say the same for the Philadelphia.

"The Black Caps are in great demand for canning. Heating, which seems a great detriment to the flavor of other berries and delicately flavored fruits, such as peaches, etc., does not seem to injure the quality of these. Besides, they do not ferment half as readily as other fruits—at least, this is our experience; and their productivenes 75 to 100 bushels to the acre is certainly a great argument in their favor. We grow them in rows six feet apart and three feet in the row, pinch the young shoots, and trim in winter as you would a hedge, with a sharp corn knife or hedge shears.

"Sorry we could not test our new peach this year again, but the evidence of Chas. Downing, A. M. Purdy, and the Editor of the *Prairie Farmer*, ought to be enough to satisfy the public."

BUDS FOR PEACH TREES.—A Raymond, Miss., correspondent asks whether there is any objection to using eyes with three leaves in Peach budding. He seems to inquire from a doubt as to whether these will unite with the stock as well as those with single buds. We have never heard of such a suspicion before. The objection has been that the triplicate buds are likely to produce blossoms, and the shoot which springs from the triplicate bud is not as vigorous as if only a single one was used. We should, however, be glad of an opinion from experienced Peach budders.

IS THIS PATENTABLE?—*Prof. Bessey, Iowa Agricultural College*, writes: "In the *Official Gazette* of the United States Patent Office, of date of November 11th, 1873, I find that one John Craig has patented what he terms an "Artificial Stem for Cut Flowers," which is nothing more than the old device of winding a bit of fine annealed wire around the base of the flower. Must we all now pay a royalty upon every bit of annealed wire when we make up our bouquets? Would it not be well for this inventor (?) to collect back pay from those of us who have been using this same device for years?

[If it can be shown that any principle has been in general use for a year before the filing of a patent, it cannot be defended. We would not give "John Craig" five cents for his patent right.—ED. G. M.]

THAT GREAT WALKER.—A South Farms, Conn., correspondent says. "The "Great Walker" of Brading must have walked but 6 miles a day and not 12, otherwise the total number of miles would be double the number given in the *Editorial Notes*, *Gardener's Monthly*, *March*:

Y	M	D	
51	3	7	
12			
615			
30			
18,457			
2,797			
15,660			walking days.
			6 miles a day.
93,960			

Deduct

Sundays.....	2665
Sickness.....	30
Holidays.....	102

It is surprising that the discrepancy in the figures has not been noticed by the many papers which had copied it, before it caught our eye. It is still more surprising that we, who usually keep a critical pencil on our desk, also overlooked it. We happen to know, however, that this "boy" went four miles each way every day for a long time, in order to be occasionally whipped—"riced" is the Shakespearian word in that section—by a beer-fuddled old pedagogue, and that Wm. Wheeler had at least two miles a day more of a walk than this boy had. The distance he has walked must be near correct. There has probably been some typographical error in the figures frequently copied. We are sorry to add that the above paragraph, written six months ago, has somehow been overlooked till now.—ED. G. M.]

JANUARY NOT JUNE.—Why our proof-reader made us say in December that the Pennsylvania Fruit Growers met in *June* when we wrote January, we cannot tell. Maybe he was thinking about cherries, or some such like treat; but we shall not indulge him in this way unless he does better. The meeting is of course in January and *not* in June.

HARDINESS OF THE ATAMASCO LILY.—A correspondent desires to know whether the Zephyranthus Atamasco—the Atamasco Lily of the South—is hardy in the State of New York?

RAPID POTTING.—"John Bull," of Saddle River, Bergen County, New Jersey, writes that he thinks it is impossible that any one can pot ten thousand plants in ten hours, and suggests that Mr. Henderson may have been deceived by some of the men helping the potter privately—or if there were that number potted it could not have been done in a workman-like manner. Our correspondent will, however, see by this month's issue that Mr. Henderson employs the man to do the working, and if the man did his work in an unworkman-like manner, the plants would be unsalable. If Mr. H. and Mr. H.'s customers are satisfied with the work, it surely is workman-like. We have allowed a rather wide scope to this discussion, but it strikes us as time to keep it within certain bounds.

DEFIANCE TREE CARNATION is the name of the variety referred to by "Subscriber" Brighton, Mass., in the following: "I send you by mail a box containing a carnation, which I found among a lot of others, and think it is a new one, having never seen one like it before; but before propagating it, I would like to have you inform me if there is one like it in cultivation already, and if not please give your opinion of it, whether you think it of sufficient merit to be introduced. It is a very strong grower.

BEATRICE PEACH CORRECTIONS.—*Mr. D. S. Myer, Bridgeville, Del.*, writes: "I would ask you to make a few corrections in next number of *Monthly* in regard to what I wrote you of the Early Beatrice and Louise Peaches. I said, or you have it published so—'I saw but four as fine peaches.'

"I would have it read thus—'I saw but four or five peaches' of either Early Beatrice or Early Louise rotting. 'Four or five' in place of 'four as fine' is all. A little further I have it 'five or more thousand of different ages,' should have been 'five or more thousand trees:' 'trees' was left out. You make me say '$\frac{1}{8}$ in. scant:' I intended '$\frac{7}{8}$ of bushel crate scant.' Please make the note of changes in the December number and oblige."

NATIONAL HORTICULTURAL SOCIETY.—A correspondent calls our attention to a project for a National Horticultural Society. We have seen or heard of no details, nothing more than the mere suggestion that such a Society would be very useful. Probably it might. It will depend on its aims and its objects.

It must be remembered that Horticulture is not Agriculture, or even Pomology. Its chief patrons must always be men and women of means and cultivated tastes, who pursue the art for the pleasure it gives them. There are hardly enough of this class to support a couple of horticultural journals with any great spirit, and what they would do with a national horticultural society we cannot see.

BON SILENE ROSE.—*E., Rochester, N. Y.*, writes: "Is the Tea Rose, Bon Silene, cultivated in England under any other name? I am surprised that a rose so popular in this country for winter blooming should in England receive *no* attention, and have thought there must be a synonymous name. I think, however, its merits in this country have been overrated."

[Attempts have been made to identify Bon Silene with Gouboult and some others, but it is distinct from any that we have heard named. We believe it is "genuine as imported."

In regard to its popularity here, as compared with England, we presume it is owing merely to its beauty as a mere bud, while in that country a rose is not of much value as when partially opened, just as with Saffrano, which is by no means as highly appreciated there as with us. Beautiful as buds, they are almost worthless when but partially expanded.]

SCIORPUS ERIPHORUM.—A North Carolina correspondent sends us for name a sedge grass, the name of which is as above; and this suggests to us to remark that it is so ornamental as to be better worth cultivation than many that are thus favored. It is a strong grower, and in many situations would be as effective as the Erianthus Ravennœ. It ought to be easily obtained, as it is widely scattered over the United States.

STEREOSCOPIC VIEWS.—We have been favored, recently, by some interesting stereoscopes from various friends. Mr. Yeoman's has one of his daily morning distribution of fruit gatherers in the picking season; quite a little army, but suggestive of anything but the course of armies in general. Mr. Y. has sold as much as $500 worth of pears from one-third of an acre.

A New York lady sends us an Azalea indica

alba, which she has grown from a small plant, to its present beautiful size and condition, "all with her own hands." It makes a beautiful picture now; its pure white flowers coming up beautifully. It is a creditable piece of floricultural skill; and we should be proud if the *Gardener's Monthly* had anything to do with educating our friend to do it.

Mr. E. A. M., *of Fernhurst, Conn.*, sends us a stereoscope of his dwelling house and lawn. It is very rare that we see a mansard roof to please us architecturally. This and the whole house is beautiful. The grounds and roads appeared to be well kept; and the impression left on our minds is that if ever the editor chances to travel in that direction, he would certainly give himself the pleasure of a visit to such a beautiful spot.

And then we have a magnificent photograph of a piece of landscape scenery, in which water plays a prominent and beautiful part, designed for the St. Louis Agricultural Exposition by Mr. Kerns. We have had personal opportunity of seeing, in some of the St. Louis Parks, the great success of Mr. Kerns' designs; but have seen nothing more beautifully effective than this.

Lawyer Apple.—A distinguished New York horticulturist writes: "I think the apple spoken of on page 370 as "Lawson" should be *Lawyer*. I have not heard of *Lawson*, though I admit I do not hear of all the new apples.

Your chromo is quite satisfactory. I congratulate you on the continued success and well-deserved popularity of your journal."

Variation in Corn.—*Mr. L. J. Templin, Kokoma, Ind.*, writes: "I have become so accustomed to seeing my little articles appear in the *Gardener's Monthly* in such good style, that I had been led to the conclusion that its compositors and proof-readers were next to infallible, and this confidence perhaps led me to careless writing. But the December number reminds that "white man mity onsartin." In my article on the "Specific Heat of Plants," a few typographical errors occur; and as some of them obscure the meaning intended, while others entirely change it, I beg leave to point them out.

"On page 359, twelfth line from the bottom, the word "germinate" should have been generate. On page 360, left hand column, first line at top, the word "same" should be snow. In the right hand colume, same page, thirteenth line from top, internal should read external. In the last line but one of the article, the word "contract" should be control. A truce to fault finding.

"The interest excited by your magazine is leading to more careful observations. A case of strange variation in corn was lately found in this country. Mr. Jos. Miller found two ears growing on the same stalk, one of which was unmixed yellow, and the other a clear red. The ears were of medium size, of good shape, and identical in form. The circumstances preclude the possibility of their being fertilized by different varieties of pollen. Will brother Arnold or somebody else explain?"

[We do not know what has got over our proof-reader lately. He is supposed to "read by copy," and the errors are inexcusable. The final revise passes through the editor's hands of course, and all technical names meet his critical eye. Errors like these referred to can scarcely be detected by any but the "copy" proof-reader. He has, however, promised to do better, and we shall try him again another year."]

BOOKS, CATALOGUES, ETC.

Report of the United States Department of Agriculture for 1872.—The agriculturist will find much of interest in this volume, but there is not much which calls for especial horticultural comment. The entomologist notices the destruction in Maryland during May, of the extreme tips of some peach trees, by a small lepidopterous insect, ascertained to be *Anarsia pruinella*. "There was scarcely a single tree in the orchard that was not injured by this pest." There is a sketch of the insect in all its stages. In the gum which often exudes from the stems of peach trees near the ground, small hair-like worms are often found,—these are the larvæ of a small fly, *Mycetobia persica*, which is figured and described. The apple twig borer, *Bostrichus bicaudatus*, is described and figured. This is quite a troublesome insect in the west,—unknown we believe to eastern orchards. There are also accounts of a large number of insects more or less injurious to the farmer and gardener.

The report of the botanist goes over the various statements made over and over again, on the flimsiest of foundations, that great changes of climate have occurred in various parts of the world by the cutting away of forests. It is time that sensible men had dropped this nonsense, as there are abundant reasons for tree planting without holding ghosts up before the people. Dr. Vasey gives a list and some accounts of trees adapted to forest culture. There are drawings and descriptions of Jute (*Corchorus capsularis* and *C. olitorius*,) and of the cundurango (*Schubertia Sp.*) There is a long extract from Professor Peck's report on the plum knot, in which he concludes that it is caused by a fungus *Sphæria morbosa*, noting, however, that the late Mr. Walsh was of the same opinion in 1867. But the correspondents of the *Gardener's Monthly* had settled this question long before these two excellent observers took it in hand.

An article on "pear tree blight," by Thomas Taylor, loses much of its interest because "pear tree blight" is so indefinite. There are a dozen or more diseases of the pear, which are all called "blights" There is another on the onion fungus; and on the peach yellows. We have reprinted, some months ago, Mr. Taylor's views on this subject, in which he seems to conclude that the disease is caused by a *Namaspora*; but this genus has been so universally observed as feeding only on dead matter, that we cannot feel satisfied that this one is the cause of the trouble. So far we prefer the idea suggested by the *Gardener's Monthly*, that the yellows in the peach tree is exclusively the work of some species of fugus feeding on the peach tree roots. There are some interesting observations on the potato disease, favoring Berkeley and others in their view that the *Botrytis infestans* is the *cause* of *the* potato disease. The other matters treated of are wholly agricultural.

Transactions of the Kansas State Board of Agriculture for 1872, *from Alfred Gray, Secretary*.—In one respect this is the most complete State Report we have seen, in this that it has a complete index of everything referred to in the text. All have a sort of index—that is a table with the heading of chapters. This refers to everything, and thus is particularly valuable.

We have, of course, the usual "lists of awards," but the matter of interest to the general reader comprises full half the volume. The papers of interest to horticulturists are "on the use of manure in connection with the fertility of the soil," by F. E. Miller; "Economic Entomology, by C. V. Riley. In this Mr. Riley treats of the Apple Root-louse, the Canker Worm, the Bee Moth, the Pea Weevil, the Rose Chafer, the Plum Curculio, the False Clinch Bug, and others. Mr. F. R. Elliott's "forests in Kansas," the report of the Kansas Academy of Science, are also bound up with the volume. In this there are lists of the Plants and Birds of Kansas. Also a scientific paper on the climate of Kansas by Professor Snow. It does not appear from this that Kansas is a particularly dry place,—the longest time without rain was in 1868, when the Kansans had to go *seventeen days* without a drop!

The Kansas Horticultural Society has also a place here for their reports. From its proceedings we note that Kansas means to take a pretty advanced position in regard to the forthcoming Centennial Exhibition; besides so much that is interesting, that it is hard to capitulate We may say in brief that it is one of the most creditable State Reports that has ever come to our book table. We suppose this is the first volume of the reports,—at least we have no other on our shelves.

The Farmer's Home Journal, of Lexington, Ky, is well known to many of our readers as among the best agricultural and family papers in the South. A large amount of ability and discretion has always been displayed in the editing It is now under the entire charge of Mr. James Duncan, who has in former times contributed to the *Gardener's Monthly*, and whom we regard as one of the most intelligent horticulturists in America. We are pleased to note this new element of strength in this already highly reputable journal.

How to Conduct a Debate. By Frederic Rowlin, New York: published by Dick & Fitzgerald.—There is no greater accomplishment

than to speak well. To be full of good thoughts, and to be unable to express them, is a misfortune which too many realize when too late to be remedied. There are few classes who are more liable to be called on to tell what they know than horticulturists. Conventions and clubs are now all over the county, and it is the commonest of our experience to have men say, I wish I could speak, for I felt that I could throw much light on that subject. This little book is intended for lyceums; but all those who think they may have to "speak a piece" at any time, may derive profit from it.

THE LADIES' FLORAL CABINET, edited by H. T. Williams, is now going on its fourth year, and is doing good work in its own special line. The illustrations are always tasteful and attractive.

THE AMERICAN NATURALIST for December is one of the richest numbers issued for a long time, though every one is generally well filled. As most of our readers know, it is a monthly magazine devoted to the popular phases of natural science. The present number, for instance, treats of the curious power some plants have of actually eating insects with their leaves. Botany, Entomology, Geology, and every branch of natural science, has equal attention. We cannot conceive how any lover of nature could put $4 to a better purpose than a year's subscription to the *Naturalist*. It is published at Salem, *Mass.*

VICK'S FLORAL GUIDE. LANDRETH'S RURAL REGISTER.—We have here before us two excellent serials, both got up by firms who have built up their business on the basis of sterling honesty, and good faith towards all who have depended on them. The former deals chiefly with flowers,—the last mostly with garden seeds. The full details of culture in the various departments treated of, make them invaluable handbooks. We should like to see one of each in all our reader's hands, and they can be had for the asking.

THE RURAL NEW YORKER.—If we were asked to name *the best* agricultural paper in the United States, we should decline to select. The agricultural press of the Union is one of the Union's most honored features. There are so many particularly excellent among them, that it is impossible to select any as the best; and yet if we were going to be executed for not deciding the question, we should hold the *Rural New Yorker* a long while in our hands before telling the exe cutioner to move on.

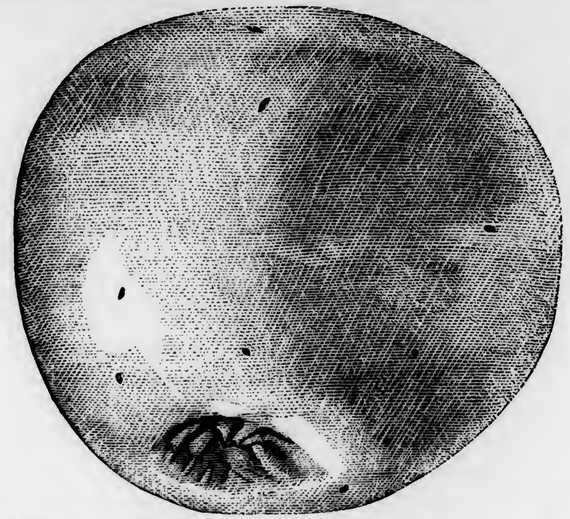
With Charles D. Bragdon, A. S. Fuller, X. A. Willard, whom we all personally know, and whose knowledge and editorial ability we have admired for a quarter of a century, besides others whom we are familiar with through their works,—and Moore himself who was never known to hesitate to spend money when the good of the paper was concerned—if a force like this would not make a good paper one might as well lay down the quill, and take to selling patent medicine. But there need be no theory about this matter. It is a pleasure to note that the *Rural New Yorker* never seemed so prosperous as now. From a prospectus and the paper before us, we see that Moore and his able editors are working together as heretofore, determined to ever do better if they can. We are pleased to record this, as though we have from time to time had a good word to say of one or another of our agricultural co-temporaries, as we felt they deserved, it seems a long time since we have thought to pay our respects to the *Rural*.

NEW AND RARE FRUITS.

THE VALLEY APPLE. By F. R. Elliott.—This is a seedling apple, planted by the present proprietor of the soil, in 1811, on the bottom valley of Cuyahoga River, Summitt County, of Ohio, and now known as the township of Boston. It came early into bearing, and has borne semi-annually, for over sixty years, full and perfect crops averaging, say, for the past thirty years, thirty bushels of fair, smooth fruit per year. In alternate years it has borne a scattering crop. The apples are of a pleasant, tart, fine delicate flesh; and while it is a winter fruit, keeping until March, yet the droppings from late August to November are of value as cooking apples.

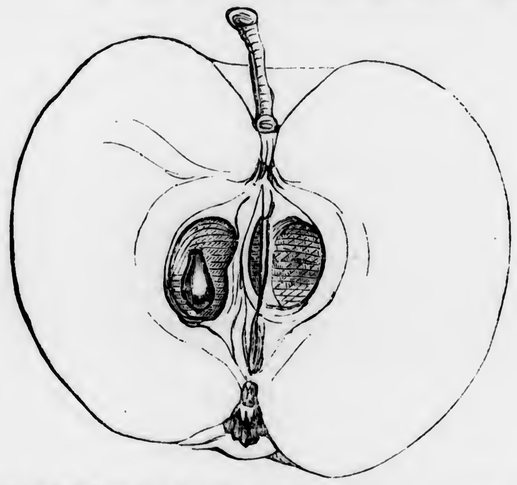
The tree is of an upright spreading habit,—vigorous and healthy,—now standing where scores of trees planted at the same time are dead and gone. The soil in which it stands is a light clay loam in the Cuyahoga Valley, and while the

The tree was planted by the father of the present owner of the tree, George C. Stanford, and who is now living, and gave me all the information of its planting, etc.



majority of our named cultivated sorts are speckled with the mold, belonging, or rather characteristic of all our fruits western grown on low loamey river-bottom lands, this has ever been clean and smooth. The size of the fruit is

In describing, let us say—FRUIT, size medium or above; roundish, very smooth, flattened at ends; *color*, clean whitish, greenish-yellow skin, with some minute russet dots, and occasionally a small russet patch. The stem is slender, about



medium, or above—my shaded drawing showing the general average of the larger specimens, while my sectional drawing shows the average of the smaller specimens.

three quarter inch long, enlarged at junction of fruit, and also at junction of bearing wood.

The cavity is open, rather, deep—smooth, regular. The basin is of moderate depth, and

corrugated, deepest at the calyx. The calyx has long narrow segmonts—closed. The flesh is whitish or nearly white; fine grained, juicy, crisp, tender, mild, pleasant, sub-acid. The core is small, set in the center of the fruit; the seeds are rich brown, oblong, lanceolate in form. No buds or grafts have yet been disseminated.

I look upon this apple at this time as a valuable variety to propagate, believing it will become one of the light colored sorts that will succeed on our bottom-lands, and be free of the moldy blotches that generally disfigure all light colored fruits grown on such soils. Its success on high lands is of course an item of the future.

Van Mon's Leon Le Clerc Pear.—*R. W., Troy, N. Y.*, writes: "I send you to-day by express—charges paid—a pear, together with a few of the leaves, for a name, which please give me through the columes of the "*Monthly.*"

The specimen sent is of the usual form and size, although more pyramidal than many. The tree is a good grower, rather spreading, although symmetrical, with an unusual shaggy bark To me the leaves seem much narrower than usual among the pears. If you recognize the fruit, or wish any further particulars in regard to it, I should be pleased to receive a reply in the first case, and furnish any information in my power in the latter. With an apology for my intrusion upon your valuable time."

[This pear seems to be Van Mon's Leon Le Clerc. We kept it till ripe, in order to feel assured. It did not quite come up to the usual high quality of this variety, though we still think that is what it is.]

Fox's Seedling Pears.—We have in good order a set of these excellent varieties, of which we are making notes for future reference as they ripen. It is rare to find so many first-class kinds from one raiser, and it will be difficult from so many good ones to select the best.

Apples from Johnstown, Penna.—October 5th, received a box of apples from Mr. M. L. Akers, with the following note. We have kept the fruit till now, December 20th, in order to judge better of its qualities:

I send you by express—paid though—some specimens of apples exhibited at the late Fair of the Highland Agricultural Society held here, to show what progress we are making. Nos. 1 and 2 are standard apples, but which have lost tables,—please name in the *Monthly* if convenient.

Hoover Pippin had its origin in Cambria County, about four miles from here, and has been somewhat disseminated in the west by emigrants from here,—particularly in the Miami Valley, O. Somerset is a name I suggest for the apples so marked, which I regard as of extraordinary beauty and value—save the time of ripening; as being in season now, it is not so valuable as later. It is a new variety, not yet disseminated, having its origin in Somerset County, about six miles from this.

[Of the numbered ones, the green prominent ribbed one is unknown,—the other is Autumn Bellefleur. The one marked *Bullock's Pippin* is Ewalt. We have *never* had such beautiful specimens of apples. The list comprized Baldwin, King of Tomkins County, Bailey Sweet, Lowell, 20 ounce, Somerset, Fall Romanite, Rome Beauty, Spitzenberg, Northern Spy, Hoover. Most of these were from one-third to twice the size we generally see them, and most beautifully colored. Hoover is a large green apple, not so showy as the others, and looks as if it would never ripen. It is not tested yet. Of the others the Somerset is the best of the lot. Ewalt and Fall Romanite the next. King of Tomkins County next, although yet abounds in "sub-acid." It would no doubt, have been better a month hence. The Somerset is an unusually large and fine apple.

NEW AND RARE PLANTS.

New Oleanders.—Great improvement is being made in the Oleander in Europe. White, yellow and red; and numerous shades of color and forms of flowers. They are being named and distinguised as we distinguish roses or Dahlias. The Oleander suits our summer climate so well, that a collection of them would be a beautiful sight to see in bloom.

The Florist and Pomologist, an excellent monthly journal to which we have more than once directed attention, has some beautiful colored plates among its recent issues.

Camellia—"Princess Mary" is a full large red one, somewhat after the style of our Sarah Frost. Its foliage is, however, very full and luxuriant,—in this respect one of the best of its class.

Masdevallias.—There are terrestrial orchids of remarkably odd forms, and showy colors well adapted to coolhouse culture; five species are figured on the one plate.

A new Race of Violets.—The *Florist and Pomologist*, says Mr. Lee of Hammersmith, has succeeded in raising a new race of violets, in which the petals are flat like a pansy. It is the result of a cross between Czar and Devoniensis. The flowers are pale blue, sweet, and very large, and Mr. Lee is "not without hope that he will make them in time parti-colored like the pansy." The best one he has named *Victoria regina.*

"*Golden Fleece*" *Thyme.* Gold-leaved bedding plants are scarce, the golden Feverfew being the best known This yellow-leaved form of the garden Thyme is highly spoken of in the English journals.

Cineraria ceratophylla, is spoken of as a promising silver-leaved plant for bedding purposes.

Hybrid Begonias.—The curious species B. Boliviensis, introduced a few years ago, has given rise to a numerous race of Hybrids. They are so numerous now it is hard to keep up with them. W Bull advertises the following:

Brilliant, very rich bright orange, a fine showy flower.
Caroline, deep rosy pink, with broad petals.
Climax, deep rich rosy carmine, the two outer petals evtremely broad.
Corsair, rosy salmon, profuse bloomer.
Dazzle, bright reddish crimson, a fine flower, with short broad petals.
Ensign, bright pink, a very elegant variety.
Gem, cream color, the reverse of the petals light pink.
Glitter, vivid orange-scarlet, extremely showy.
Hermine, bright orange-cinnamon, very distict.
Lothair, deep rose, a fine flower, with short broad petals.
Magnet, beautiful light pink, the reverse of the petals deep pink.
Mazeppa, very light cream color, the reverse of the petals tinted with orange-pink.
Meteor, intense scarlet, vermilion, very bright and showy.
Phillis, sulphur, shaded with pink.
Seraph, soft pink, the exterior part of the two outer petals suffused with rose.
Surprise, bright pink, a very pretty color.
Trojan, bright rosy pink, very distinct.

Aquilegia chrysantha is the name finally decided on by Dr. A. Gray, for the long spurred, golden Columbine, about which so much has recently been said in the horticultural journals.

Improved Foliage Beets.—The garden beet would be a beautiful ornament in the flower garden if it were not so common elsewhere. But there have been some variegated kinds produced which are said to be as handsome as the Coleus. Mr. Bull thus talks about them,—one in particular, which he calls *Multicolor.*

"This useful and handsome decorative Beet has been raised by Mr. Clark, gardener to W. S. Mitchell Innes, Esq, of Edinburg, where it has been carefully grown and selected for some years past. It was exhibited at the Royal Caledonian Horticultural Society's Meeting in Eninburg, and received a first-class certificate. It has also been exhibited at a meeting of the Floral Committee of the Royal Horticultural Society, London, in January, 1873, where it also received a first-class certificate; so that, both in the North and South, the striking handsome character of this Beet has obtained for it the highest awards that could be given.

"With reference to the origin, Mr. Clark states that a single variegated plant came up in a lot of

the ordinary garden Beet. This plant produced seed, which gave a numerous progeny of various colors. The seed saved from the second generation produced plants in which the variegation was still further developed, and embracing the following colors: rose, orange, magenta, silver bronze, crimson, with various shades of purple—and with the different colors blended, from the brighest orange to the richest carmine; and when shown before the Royal Caledonian and Royal Horticultural Societies, twenty distinct varieties were exhibited.

From its hardy character, and the variety of colors it produces, the use of this Beet as a decorative plant for flower grrden (apart from culinary purposes), can scarcely be over-estimated; plants potted in the autumn would be extremely serviceable for cool conservatory decoration, their colors rivalling those of the brightest Dracænas, with the advantage of not requiring a stove like the last named.

ABIES DOUGLASII; VAR. STAIRII.—Silver varieties of trees do not generally do well in the United States. The following variety of the Douglass Spruce seems popular in England. The *Gardener's Chronicle* says:

"The first thing was that of an Abies Douglasii, which we saw at Castle Kennedy, one of the seats of the Earl of Stair. It was almost white from head to foot. It is now a well-grown plant about 8 feet high, and constantly exhibits the same phenomena, as do also a number of other plants raised from it by grafts or cuttings. When it first puts out its leaves they are perfectly white, and they continue so until the end of August, by which time a shade of green begins to spread over them. It first appears at the base of the older leaves, gradually creeps up towards the tip, doing the same successively with all the leaves, until, by the end of September, the variegation is wholly or almost wholly gone. It is strong and healthy as any Douglas Fir around it, and so are the young plants raised from it. It is not the same as if the tree was originally weak, and, on acquiring strength, threw off the pallor of ill-health; the same thing is repeated year after year, with the unvarying regularity of a normal action inherent in the plant.

NEW SEEDLING ROSES.—A congress of rose growers was held last fall at Lyons, France. Those who had seedling roses submitted them for judgment. Fifty were sent. The following were certified as the best of the lot: Madame Vangert, Captain Christy,—hybrid perpetuals; and two Teas, Shirley Hibberd, which, is said, will be a rival to Saffrano, as a cut flower variety: and Marie Guillot, a pure white, large show rose.

DOMESTIC INTELLIGENCE.

THE BEST APPLE.—At the last meeting of the Warsaw Horticultural Society, the question was:

What one variety of apples combines in the greatest degree the three following conditions: bearing qualities, keeping and commercial value?

The members participating in the question were the Messrs, Grovers, Hathaway, Gregg, Peyton, Herman, Tyree, Hay, Warner, Willis, Hammond, and the Secretary. It was decided that the Ben Davis Apple met these requirements more fully than any other variety. Willow Twig would stand next according to the remarks of those speaking on the subject.

It is proper to observe here that the Ben Davis apple grown in this locality is not the leathery, tough, tasteless apple which seems to attach to it in other localities, but is a fine, handsome, large apple, of uniform size, and, although not the finest flavored apple on the list, is nevertheless a very good apple, and leads all others in bearing and keeping, and beats everything in the market. It is believed by some that the soil of the white oak clearings, having a more or less substratum of limestone, has something in favor of orchards. This is more especially so commencing immediately south of Warsaw, along the timber-regions. At all events, the Ben Davis is grown in its greatest perfection in these localities. The apples before the meeting were noted for their size, beauty, flavor and perfectly sound condition. We shall not be disappointed to witness apples of the same variety exhibited at the June meeting.

Thus, year after year, we lesson the list of apples; and the favorites of eastern orchardists are disappearing from our orchards, and we are making a select list for the northwestern markets. Samples of the Ben Davis grown on those timber ridges, have been sent me on several occasions, and have been all that is claimed for them; but, on our common prairie soils, it may be a question if the Willow Twig isnot the most valuable of the two; or would it not be well to plant largely of both, for they both fill nearly all the requirements of the best orchard apple?

The Ben Davis is an annual bearer,—rather more so than the Willow Twig That they will take the place of the Greening and Baldwin, is quite certain. Out of 2,000 varieties of the apples, we may plant twenty-five of the best, or perhaps we will do better to confine ourselves to half that number. We have but one strawberry, one cherry, and one pear that tower above all their fellows, and we shall no doubt be able to find one plum that will bid defiance to all adverse conditions. Thus one after another of our difficulties are removed, and the West will in time have all the good things that belong to the Temperate Zone.—RURAL, in *Chicago Tribune*.

A MODEL FRUIT FARM.—Mr. Robert S Emory, of Kent county. Md., has, we believe, one of the best arranged and cultivated, as well as most productive fruit farms in the State. An enthusiast in everything connected with fruit growing, he bestows a degree of attention and zeal upon his orchards and plantations which does not fail to give him good returns.

Of the small fruits, he grows an extensive assortment, marketing strawberries, raspberries, gooseberries, blackberries and currants, believing that much better profits are found in combining the cultivation of all than paying exclusive attention to any one of these crops. One special reason for this is the opportunity of thus making greater use of the crates and boxes for carrying fruit, thus making the capital invested in them more "nimble," and, therefore, more profitable. It frequently happens, with strawberries, for instance, that the packages containing the first of the crop are not returned to the grower in time for any further service in moving that crop, and they are, therefore, dead capital for a year, unless they can be made available in transporting a crop of some other fruit.

Mr. Emory's pear orchard, now eight years old, of some 3,000 trees, was, last summer, pronounced by Mr. P. T. Quinn—a high authority—the finest he had ever seen. The blight, however, has carried destruction into these trees, and many vacancies are this year to be noticed. It sometimes happens that in the short space which ordinarily intervenes between the full growth of the fruit and its coloring and maturing sufficiently to gather, the entire tree is struck by this sudden and incurable disease, and less than ten days will sometimes change a row of fine, healthy-looking trees into black and naked skeletons. The Vicar of Winkfield seems here peculiarly liable to these attacks.

A young orchard of about 4500 trees, three years planted, presents the most even and regular show of pear trees we ever saw; they might seem, from their similarity of height and contour, to have been pressed in the same mould. The varieties are exclusively the Bartlett and Duchesse, pears which appear, particularly the latter, comparatively free from the blight.

Whether it is from his superior skill in cultivation or from a gracious return which Pomona makes him for his devotion at her shrine, Mr. E. certainly produces pears which, taken all together, are superior to almost any others we have ever seen. We noticed Duchesse pears weighing over eighteen ounces, and the average of a box of the same which he sent after us, as a memento of our visit, was thirteen ounces. He is in full fellowship with the believers in clean cultivation, repudiating entirely any faith in pears in grass. Mr. Emory has also a flourishing and productive peach orchard of, we think, some 6,000 trees. For these orchards no trees have ever been bought. The stocks are raised in nurseries on the place, and budded by Mr. Emory himself and his assistants. Of pear-stocks he imports considerable quantities each year direct from France. By this course he thinks he gets more nearly perfect trees, and, with an absence from the risks which his experience has proved are sometimes unavoidable, even in dealing with the most reliable and painstaking nurserymen. Mr. Emory is as enthusiastic and successful an apiarian as he is a fruit-grower, and from the returns which we are told his bees bring him, he must find a very handsome profit in this too much neglected branch of farm economy.—*American Farmer*.

HORTICULTURAL NOTICES.

PENNSYLVANIA FRUIT GROWERS' SOCIETY.

The Fifteenth Annual Meeting of this Association will be held in Mechanicsburg, Cumberland County, Pa., commencing January 21, 1874, at 7.30 o'clock, P. M.

The Executive Committee again earnestly urge the claims of this Society upon the fruit-growers of the State, believing it to be of the greatest advantage to their business, to the pleasures of a rural life, and outside of the press, the only sure system by which we can gain reliable information about new fruits, the best methods of cultivation, the causes and remedies for diseases in trees, and all other kindred topics.

Horticulturists of Pennsylvania, are you willing for other and newer States to surpass you in matters pertaining to this important item of our agricultural prosperity? Already is the great West reaping the benefit of her labor in this respect, and we may well profit by her example.

Where a few enthusiastic pomologists on the Atlantic border, meet in their annual assemblies, our Western friends gather together from all parts of their respective States with all the energy and enthusiasm that true success invariably creates, year by year increasing in usefulness and prosperity. Can we not learn a useful lesson from such as these, and is there not equally as favorable opportunities in our varied soil and climate for the orchardist to prosper? Of this there can be but one opinion, and all that is needed, is the will to plan and carry out.

We have the elements within our Commonwealth, to make these meetings second to none in point of usefulness, so that orchardists all over our country may have just cause to thank us for our word; but to accomplish this in a satisfactory manner, every one feeling an interest in the subject, must take an active part in the proceedings, and endeavor to spread information among those who are as yet unacquainted with our organization.

Horticulturists from other States are again cordially invited to meet with us and assist in the discussions. We owe such a debt of gratitude for their continued presence at our gatherings year after year; and we ask to be placed under still greater obligations to them in th years that are to come.

Representatives of the Agricultural and Horticultural Press of the country, are especially invited to be present, and every opportunity will be given them for collecting information for their respective journals.

This Association does not, as its name implies, confine its discussions strictly to the subject of fruits, but all the various operations of the horticulturist and landscape gardener, meet with due deliberation; and any information desired in regard to varieties of trees, or their culture, will be cheerfully given to all inquirers.

In relation to the place of meeting, we would say, that the town of Mechanicsburg is located in the Cumberland Valley, celebrated for its fertile soil and abundant crops. A local horticultural society has been in operation here for some years, and consequently a deep interest is felt in the cause by a large portion of the residents. The trains on the Cumberland Valley Railroad connect at Harrisburg with numerous railroads radiating from this point in every direction, so that little or no detention will occur in the entire trip.

Every one in the possession of fine specimens of fruit is requested to send the same for exhibition. The Committee on New Fruits will determine the names of unknown varieties so far as practicable. Owners of new and improved horticultural implements of every description, are invited to exhibit the same on our tables. Due credit will be given all contributions; and where depositors cannot be present, their articles may be sent to the care of Henry S. Rnpp, Mechanicsburg, Pa, who will attend to having them exhibited conspicuously.

ORDER OF BUSINESS.

January 21st Address by the President—Election of Officers—Unfinished Business—New Business—Report of Committees, etc.

TOPICS FOR DISCUSSION.

The following list of subjects has been reported by the Committee on Business, as proper for discussion during the sessions of the Convention. Gentlemen whose names are appended to each, are expected to open the discussions with impromptu remarks, or short essays, as they may prefer.

1. What soils are best adapted to the various fruits respectively, with suggestions for counteracting the evils resulting from those of an uncongenial character? Paschall Morris, Editor *Practical Farmer*, Philadelphia.

2. Is it desirable to devote our best farms to the cultivation of fruits? J. Hibbard Bartram, Chester County, Penna.

3. Can fruit trees be made over-luxuriant? A. W. Harrison, Philadelphia, Pa.

4. Is there anything new in relation to the Grape Question, as to cause and remedies for our repeated failures? Rev. James Calder, Agricultural College, Center County, Pa.

5. Are Dwarf fruit trees desirable? Tobias Martin, Franklin County, Pa.

6. Do fruit trees require pruning, and if so, when and how? H. M. Engle, Lancaster County, Pa.

7. Is fruit culture more profitable on costly land near cities, or on cheaper land remote from markets? Wm. Parry, Cinnaminson, N. J.

8. Is it true that only a few kinds of fruits will do well in each locality? S. W. Noble, Montgomery County, Pa.

9. Can fruit culture be made profitable in connection with the timber question? Thomas Meehan, Germantown, Pa.

10. What trees are the most suitable for small lawns or door-yards? T. M. Harvey, Chester County, Pa.

11. What few varieties of Roses are the best for general cultivation, and what is the best cul ture, pruning, and after-management? Charles H. Miller, Mt. Airy, Philadelphia, Pa.

12. What are the most destructive insect enemies, against which we have to contend; what the most approved methods of extermination; and have any new species been recently discovered? A. S. Fuller, Ridgewood, N. J.

13. At what age should an orchard be seeded down with grass, to produce the best results? Dr. J. L. Suesserot, Chambersburg, Pa.

14. What are the best hardy shrubs for general cultivation? H. T. Williams, Editor *Horticulturist*, New York city.

15. What new fruits, recently introduced, appear worthy of dissemination? E. Satterthwait, Montgomery County, Pa.

16. What is the best variety of Asparagus, and what the best method of cultivation for market and private garden? John S. Collins, Moorestown, N. J.

17. Are organic, or inorganic manures best for the growth of fruit trees and plants? Prof. S. B. Heiges, York, Pa.

SPECIAL NOTICE.

Members are requested to furnish the Secretary with answers to the following questions, as early as possible during the sessions of the Convention; the aggregate to be announced before its close.

1. What one variety of each of the following fruits will prove the most profitable for market in Eastern Pennsylvania? Apple, Pear, Cherry, Plum, Peach, Grape, Currant, Gooseberry, Raspberry, Blackberry, and Stsawberry; taking into consideration, productiveness, season, quality, health, regularity of bearing, etc.

2. What one species of Ornamental tree is the best adapted to street planting along broad avenues; and what one is best for narrow streets?

3. What six hardy flowering shrubs will prove the most popular for general cultivation; to be dissimilar in color of bloom, and flowering season?

WESTERN NEW YORK HORTICULTURAL SOCIETY.

The Nineteenth Annual Meeting of the Western New York Horticultural Society will be held in the Common Council Chamber, in the City of Rochester, commencing on Wednesday, January 7th, at 11 o'clock, A. M.

A full attendance of the members is expected, and all who feel an interest in Fruit Culture and Horticulture, are cordially invited. Kindred Societies in this and other States, are requested to send delegates and contributions of new or rare fruits, and any objects of special interest in Horticulture are solicited.

Reports are expected from the following Standing Committees, and many of the most important Horticultural topics of the day will be discussed.

Executive Committee.—H. E. Hooker, Rochester; J. J. Thomas, Union Springs; T. C. Maxwell, Geneva; E. Moody, Lockport; S. Hatch Gould, Rochester.

Native Fruits.—J. J. Thomas, Union Springs; Charles Downing, Newburg; W. C. Barry, Rochester; George S. Conover, Geneva; S. H. Clark, Syracuse.

Foreign Fruits.—George Ellwanger, Rochester; W. B. Smith, Syracuse; Thomas Smith, Geneva; E. W. Sylvester, Lyons; C. L. Hoag, Lockport.

Nomenclature.—Charles Downing, Newburg; J. J. Thomas, Union Springs; P. Barry, Rochester; D. W. Beadle, St. Catherines, Ontario; S. D. Willard, Geneva.

Ornamental Trees and Plants.—George Ellwanger, E. Frost, Rochester; T. C. Maxwell, Geneva; G. Zimmerman, Buffalo.

Garden Vegetables.—E. S. Hayward, Rochester; John Crane, Lockport; J. W. Gray, Medina.

On Shipments of Fruit.—C. L. Hoag, Lockport; E. W. Sylvester, Lyons; W. H. Coleman, Geneva; C. S. Cole, Spencerport; O. C. Chapin, Bloomfield.

On Entomology—H. T. Brooks, Pearl Creek, N. Y.; E. Ware Sylvester, Lyons; E. W. Herendeen, Geneva; Wm. Saunders, London, Ont.

On Ornithology.—George T. Fish, Rochester; H. T. Brooks, Pearl Creek, N. Y.; E. W. Herendeen, Geneva.

On Botany.—W. C. Barry, J. J. Thomas, D. W. Beadle, George T. Fish.

W. P. BISSELL, *Secretary and Treasurer.* P. BARRY, *President.*

MASSACHUSETTS HORTICULTURAL SOCIETY.

HORTICULTURAL HALL,
Boston, December 16th, 1873.

MR. EDITOR:—In the November number of the *Monthly*, I notice some errors in your account of the Massachusetts Horticultural Society's Exhibition, particularly in what you say of the fruit show, which I think you will be glad to have corrected. Perhaps you will be surprised at my beginning with the statement, that you did not see the Massachusetts Horticultural Society's Exhibition of fruits at all, and it is this impression which was carried away, not only by yourself, but I fear by others who attended the meeting of the Pomological Society, that I wish particularly to correct. Much regret was expressed that our friends who attended that meeting could not have remained to see our fine show of fruits and vegetables the week after, as we felt quite confident that they would have been as surprised and pleased as were the few who did stay.

The Exhibitions of the Massachusetts Horticultural Society have for some years past so far outgrown the capacity of the Society's Halls, that it has been in contemplation to divide them, holding the show of plants and flowers one week, and that of fruits and vegetables the succeeding week; and this plan was carried out this year, The fruits in the lower Hall during the meeting of the American Pomological Society, were simply the contributions of the Massachusetts growers to the Exhibition of the Pomological Society, the real fruit and vegetable Exhibition of the Massachusetts Horticultural Society, having been held a week later. The upper hall was wholly filled with grapes and pears, the display of the latter show far surpassing that made at the meeting of the Pomological Society. There were about one hundred contributors of fruits, twelve of these contributions being collections of pears of twenty varieties each for premium, and the amount of prizes and gratuities awarded was $683.

The lower hall was filled with apples and vegetables. There were forty contributors of vegetables who received prizes and gratuities to the amount of $400.

The number of contributors of plants and flowers was thirty-seven, and the amount of prizes and gratuities awarded $669.

Respectfully yours,
JOHN G. BARKER,
Chairman Com. on Plants and Flowers of Mass. Horticultural Society.

NORTHERN ILLINOIS HORTICULTURAL SOCIETY.

The Annual Meeting of the Northern Illinois Horticultural Society will be held in Farwell Hall, in the city of Sterling, Whiteside County, January 27, 28, 29, and 30, 1874.

This meeting of the Society it is expected will be the most interesting and important ever held by the Society.

The discussions will embrace subjects in every department of Horticulture, both in theory and practice, new and old, and a most profitable and enjoyable season will be had.

The Wallace House and Boynton House will reduce their prices to $1.00 per day to members attending the meeting, and the citizens of Sterling will extend a cordial hospitality. The reduction of fare by Railroads to members attending, Local Committees, etc., will be announced in due season.

A cordial invitation is extended to all interested in Horticultural pursuits to attend this meeting.

D. WILMOT SCOTT, *Secretary.* S. G. MINKLER, *President.*

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APPLE, do do PLUM.
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500 Acres of Nursery. } T. C. MAXWELL & BROS., Geneva, New York.

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INTENTIONAL SECOND EXPOSURE

BOOKS FOR RURAL LIFE.

Will be forwarded by mail, post-paid on receipt of price.

Allen's, R. L., American Farm Book	$1 50
Allen's, R. L. Diseases of Domestic Animals	1 00
Allen's, R. L. Rural Architecture	1 60
Allen's, L. F., American Cattle	2 50
Allen's, R. L. & L. F., New American Farm Book	2 50
American Architect	7 00
American Agricultural Annual, paper 50; cloth	75
American Horticultural Annual, "	75
American Bird Fancier (Brown's)	30
American Farmer's Encyclopedia	6 00
American Weeds and Useful Plants	1 75
Art of Saw Filing	75
Architecture, Modern American, Cummings & Miller	10 00
" Principles and Practice of, By Loring & Jenning	12 00
Baker's Fruit Culture	4 00
Bassett on Cranberry Culture	30
Barry's Fruit Garden	2 50
Bell's Carpentry made easy	6 00
Bement's Poulterer's Companion	2 00
Bement's Rabbit Fancier	30
Beet Root Sugar	1 50
Bicknell's Village Builder, 77 plates	2 00
Bommer's Method of Making Manures	25
Boussingault's, J. B., Rural Economy	1 60
Browne's Trees of America	6 00
Breck's New Book of Flowers	1 75
Bridgeman's American Gardener's Assistant	2 50
Bridgeman's Florists Guide	1 00
Bridgeman's Fruit Cultivator's Manual	1 00
Bridgeman's Kitchen Gardener's Instructor	1 00
Buist's Robert, Am. Flower Garden Directory	1 50
Buist's, Robert, Family Kitchen Gardener	1 00
Burr's Field and Garden Vegetables of America	5 00
Carpenter and Joiner (R. Riddell)	7 00
Carpenter and Joiner's Hand Book (Holly)	75
Chorlton's Grape Grower's Guide	75
Chemistry of the Farm (Nichols)	1 25
Cleveland's Villas and Cottages	4 00
Cobbett's American Gardener	75
Cole's, S. W., American Fruit Book	75
Cole's American Veterinarian	75
Cooper's Rural Hours	2 00
Copeland's Country Life	5 00
Cottage Gardener's Dictionary	3 50
Dadd's, Geo. H., American Cattle Doctor	1 50
Dadd's Modern Horse Doctor	1 50
Dadd's Anatomy and Physiology of the Horse (plain plates)	3 50
Dana's, Samuel H., Muck Manual	1 25
Darwin's Variations of Animals and Plants (2 vols)	6 00
DeVoe's Market Assistant	2 50
Downing's, A. J., Landscape Gardening	6 50
Downing's Cottage Residences	3 00
Downing's Fruits and Fruit Trees of America	4 00
Downing's Rural Essays	5 00
Downing's Ladies' Companion to the Garden	2 00
Du Breuil's Vineyard Culture (Dr. Warden)	2 00
Eastwood on Cultivation of the Cranberry	75
Elliott's Western Fruit Grower's Guide	1 50
Elliot's Lawn and Shade Trees	1 50
Every Woman her own Flower Gardener	50
Farm Talk (Brackett)	1 00
Farming for Boys	1 50
Field's, Thomas W., Pear Culture	1 25
Five Acres to Much, (illustrated)	1 50
Flagg's European Vineyards	1 50
Flax Culture	50
Flint, Chas. L., on Grasses	2 50
Flint's Milch Cows	2 50
Flower Gardens for Country Homes	25
Fowler's Homes for All	1 50
Frank Forester's Fish and Fishing, 8 vo. 100 engravings	3 50
Frank Forester's Manuel for Young Sportsmen, 8 vo	3 00
French's Farm Drainage	1 50
Fuller's Grape Culturist	1 50
Fuller's Small Fruit Culture	1 50
Fuller's Strawberry Culturist	25
Fuller's Forest Tree Culturist	1 50
Fulton on Peach Culture	1 50
Geyelin's Poultry Breeding	1 25
Gray's How Plants Grow	1 25
Gray's Manual, Botany and Lessons, in one vol	4 00
Gray's School and Field Book of Botany	2 50
Green on Trout Culture	1 00
Gregory on Squashes, paper	30
Guernon on Milch Cows	75
Guide to Fortune	1 00
Haraszthy's Grape-culture and Wine-making	5 00
Harris' Insects Injurious to Vegetation, clo. $4; col. eng's	6 50
Harris on the Pig	1 00
Hatfield's American House Carpenter	3 50
Henderson's Practical Floriculture	1 50
Henderson's Gardening for Profit	1 50
Herbert's Hints to Horsekeepers	1 75
Hoopes on Evergreens	3 00
Hooper's Dog and Gun, paper 30 cents, cloth	60
Hop-culture	40
How to Buy a Farm, and Where to Find One	1 75
How to Manage a Building Association	2 00
Hunter and Trapper	1 00
Hussman's Grapes and Wines	1 50
Jacques' Manual of the House	1 50
Jacques' Manual of the Garden	1 00
Jennings' Cattle Doctor	1 75
Jennings on the Horse and his Diseases	1 75
Jennings' Sheep, Swine and Poultry	1 75
Johnson's How Crops Grow	2 00
Johnson's Peat and its Uses	1 25
Johnston's Elements of Ag. Chemistry and Geology	1 50
Johnston's, J. S. W., Agricultural Chemistry	1 75
Kemp's Landscape Gardening	2 50
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The Gardener's Monthly,

DEVOTED TO

Horticulture, Arboriculture, Botany and Rural Affairs.

EDITED BY THOMAS MEEHAN.

Old Series, Vol. XVI. FEBRUARY, 1874. New Series, Vol. VII. No. 2.

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We remember once seeing a clump of dogwood and viburnums on a friend's ground who has quite a knack for making special points out of very common things. In the center of the clump was Cornus alternifolia, the blue stemmed dogwood, a kind we are surprised is not in more common use. The branches grow in a *peculiar* vase form, and in the winter season the stems are of a pearly blue. Then there was Cornus alba the white berried dogwood, with deep scarlet stems; C. sanguinea, the English, with blood-red; and the C. sericea, with bright pink stems Cornus florida does not match well with this group. The kinds we have named are selected chiefly in view of their winter interest. The flowers are not showy. To make up for this the Viburnums are introduced. Although one kind, Cornus paniculata, has flowers handsome enough to sometimes bear the name of American Laurestine.

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INTENTIONAL SECOND EXPOSURE

dant clusters of white flowers, no less so. There are several Willows which, as shrubs, we would on no account be without; for their flowers large and sweet, so early that the first sun that thaws the March snow, brings them out also. The Goat Willow, and the Villars Willow—male varieties of course—are especially to be mentioned. The Indian Cherry (Amelanchier), following the Willow in flowering, and very beautiful; and the Double Pink, and Double White Dwarf Almond, are also early and pretty. The Yellow, White, and Crimson Azaleas are magnificent, but so scarce in nurseries we are almost afraid to have them in this list. The different Berberries can be scarcely spared for their pretty red berries in fall. The Sweet Shrub or Virginia Calycanthus, is one of the sweetest of all flowering shrubs, though its color is dull. The Bladder Senna is very desirable for its love of our summer heat, flowering profusely during July and August. The Mezereon is particularly sweet and attractive, blooming very early, but like the azalea, rather scarce in nurseries. The Deutzias are well known—scabra and gracilis are the two best. The Burning bushes are beautiful in the fall; the Mississippi Purple (*atropurpurea*), and the European are two most desirable. The Golden Bell and early Spiræas, as prunifolia, Blumeana and Reevesii, every one wants, as well as the Wiegelia rosea. The public taste is divided on the Althea, yet there are few gardens without some one variety or other. The variegated-leaved is scarce, but as desirable as any shrub grown. The Oak-leaved Hydrangea makes a very striking object in a collection; and the common garden Hydrangea indispensable for dense shade. For flowering in August, and for dwarf compact habit, Hypericum Kalmianum, or the H. prolificum, is perhaps unrivalled. A rather scarce, but particularly pretty native shrub is Itea Virginica, which, like the Magnolia glauca, a swamp plant, cultivates well in dry ground. The Jasminum nudiflorum should be trained to a stiff stake, and get a pruning with the shears twice a year; it then grows very compact, and will support itself after the stake rots away. Then, it makes one of the prettiest shrubbery bushes imaginable. As an oriental looking plant, the common Privet is good; indeed, its pure white flowers, fragrant as they are, and jet black berries, always attract attention. It is a plant also that will thrive in the most gravelly soils. The Upright Honeysuckles are perhaps the most common in gardens; the Tartarian deservedly so, few things are prettier. The Fly Honeysuckle also is desirable, for though the flowers are not quite as showy as the Tartarian, the habit is more graceful. Then the Mock Oranges or Philadelphus, though all white flowering, afford, by their diversity of habit, many good shrubs. The sweet one (*P. coronarius*), one of the oldest and best, is least common. The Large-flowered and Gordon's upright are the two next best. The Tree Pæonies, though rather expensive, every one wants. The Red and White Snowberry make a good show in winter by their interesting fruit. As for the Lilacs, we need scarcely recommend them. Common as they are no garden is complete without them. The Persian is a very distinct one from the common kinds. There are many new varieties, but they are but shades of old colors. The Tamarix is not often seen, but a great favorite of ours. In the class of Viburnums the Snow ball is well-known; also the high bush or false Cranberry; the Black Haw and the Wayfaring trees are the best.

For a collection of desirable trees, not particularly scarce, but which could be had in most nurseries, we would select the Norway, Red, Sycamore and Sugar Maples; English Horse Chestnuts, where the soil is not too hot or dry; English White Birch; English Hornbeam, a rather small tree; Judas tree, either English or American; European Beech, also the blood-leaved variety; European Ash, including the weeping variety and flowering Ash (*ornus*); European Larch, and the American to make a pretty tree when mature; the Sweet Gum; Magnolia tripetelia; Mimosa tree (*Julibrissin*), south of Philadelphia; Paulownia for those who like sweet or showy flowers regardless of an ugly growth; Oriental Plane for grandeur and rapid growth; and of the Oaks, the Engligh, Scarlet, Mossy-cup and Swamp White are the best. The deciduous Cypress, American Linden, and where the Elm-worm is not troublesome, the American Elm.

Amongst large sized trees of the evergreen class, that are almost indispensable in grounds of any size, are the White or Weymouth Pine, Austrian Pine, Scotch Pine, all well known; but there are a few others which are scarcer, but which when common enough to be cheap, will be quite as much appreciated as these. Amongst these are the Bhotan or Hymalayan Pine, *Pinus excelsa*. This has been unpopular because of a few fine specimens having been killed by some insects of fungus, it is not clear which; but we know of some specimens thirty feet high, and believe they are no more subject to disease than the White Pine. *Pinus Australis;* the long-leaved Pine of the South, is hardy in Philadelphia, but it has to get strongly rooted before it grows fast, and has to reach age before it branches much; we cannot speak of its value in ornamental gardening. *Pinus maritima* is somewhat like it in its long leaves, but is the most rapid of all pines. It is not pretty when young, but makes a very striking appearance with age on large lawns. It is just hardy in Philadelphia, but we suppose would be too much injured to be popular north of this generally. *Pinus mitis* and *Pinus regida*, are too very pretty native Pines of large growth, equal in beauty to any foreign kinds, but so rarely grown in nurseries that we are afraid to name them here, as we do not know where the planter could obtain them. *Pynus pyrenaica*, is much like the Austrian, but has longer and finer foliage, and the wood is reddish instead of a grey brown, as in the common Black Austrian. Amongst the spruces the best known and most essential is the Norway. Then we may use the White Spruce, and, in Northern regions, the Black Spruce. We believe it does no good south of this point. The Hemlock Spruce is very desirable so far south as North Carolina, below that it dwindles away. Amongst the rarer ones are *A. Menziesii*, and south of Philadelphia, *A. Douglasii*. Of the fir tribe the Silver is extremely desirable, and the Balsam Fir in northern regions, or in low rich soils, but not wet. Amongst the rarer ones very desirable is the Siberian, the Nordmann, and the Cephalonian Silvers—the last the tenderest we believe—the *nobilis* and *grandis* will also prove very hardy and desirable, although we have seen no very large specimens. We think we may class the *Cryptomeria japonica* amongst the larger class of Evergreens which is hardy and desirable, and then close our list, no very extensive one. Of Evergreens which make only a medium sized tree, we also have Pines, Spruces, and Firs; of the former, the Cembran Pine is indispensable; and if we could find them in our nurseries, we would like to add *Pinus inops* and *Pinus Banksiana*. Of Spruces we have no common ones of medium height, but a rather rare one, *Abies orientalis* ought to be in every small garden where choice and good things are desirable. When we get to the smaller size evergreens or dwarfs, we have a great variety amongst Junipers, Arborvitæs, Yews. Of this class, however, are three which deserve especial mention, because we think that any one who will make them common enough to plant cheaply everywhere, will be public benefactors. We mean Lawson's Cypress, Nootka Sound Arborvitæ, and the *Libocedrus decurrens*, all hardy and very beautiful evergreens of medium growth.

Hardy herbaceous plants will form an excellent tribe from which to make an especial feature in a garden; and perhaps nothing is better to bring into contrast with the massing system. If a collection of herbaceous plants in some central set of beds on a lawn could have plants on the massing system around it, the effect would be very good. Generally herbaceous plants can be made very effective as a sort of connecting link between the ornate parts of the garden near the dwelling, and the more wild shrubbery, or woodland.

In the more practical work of the flower garden and pleasure ground, pruning and training should, of course, be finished at once. In tying up vines and climbers to wire trellises, or, indeed, to any kinds of trellises, on porticoes and piazzas, they should never be allowed to entwine themselves in and about the meshes. It is often necessary to take off the plant to paint, repair, or do something with the trellis or vine, and it is well to keep it on the outside, to prevent injury under such circumstances. Besides, some fine climbers, as Gelsemium nitidum, and many kinds of roses, which require a slight protection in winter, may then be easily taken down, and be coiled into a circular form at the base of the plant, and covered with soil, which is one of the simplest and best modes of protection, and by which many of our hardier greenhouse climbers might be kept out in pretty severe winters.

Do not plant immediately after the frost leaves the soil; wait till it dries a little, when you can tread the soil firmly about the roots without risk of rendering it hard as it dries more. If circumstances make it necessary to plant in wet soil, do not press the soil much until it gets drier. It is important to have the soil we pressed about the roots, but it injures soil press it when wet.

As soon as the frost leaves the ground, the lawn should be rolled with a heavy roller, while it is yet soft; this will make it have a smooth surface, take out many small inequalities, and press again into the soil the roots of the finer grasses which the frost may have drawn out. Where new lawns have to be made next spring, the

seeds should be sown as early in March as possible, and the ground should be prepared for that now, if opportunity offers. For a good lawn the soil should be loosened at least twenty inches deep, and be well enriched with stable manure, where practicable, in preference to any concentrated preparations. Guano, super-phosphates, &c., are well enough; but they do not give the soil that *fibre*, or lend it that *porosity* by which it retains moisture and air, so essential to perfect vegetation.

FRUIT GARDEN.

Discussion is still progressing, as to whether it is right or not to prune fruit trees at transplanting. Our advice is to do so, more or less, in *all* cases.

Wherever grafting is to be done, many proceed at once when they think frost is over. Our experience is that the best time is just as the leaf buds are bursting. The grafts must be cut long before, and buried in the earth to keep them from shrivelling. When the scions are thus preserved grafting may be done to near midsummer. Very strong and long grafts may be used on all trees, if not done too early. Marshall P. Wilder gets strong trees very soon by this plan. If too early done these long shoots would dry up. These remarks are for amateurs who have but a few trees to do; and it is now almost necessity for every one to have some varieties which are not found to do well in a locality re-grafted with those that will. Nurserymen who have much to do, must begin early; but they use short grafts, with little evaporating surface exposed. For wax to keep out the air from the wound, farmers use common earth, with a piece of rag tied around to keep it from washing away. Others who have more to do, use beeswax, rosin, and lard in about equal proportions, melted, and applied a little warm. Some years ago we published a plan for making a liquid wax, simply melted rosin poured into a bottle of alcohol.

Grape Vines are of course all pruned and tied up. Just as the buds are bursting the steel blue beetle attacks them. Hand killing is the remedy. Where Grape Vines are to grow fast, use twiggy stakes or wire trellis for them to cling to. It is as good as manure. Also in planting Grapes be sure to have a dry bottom. The best security against wet roots is to raise the soil above the level of the surface. Also the drier the soil the richer it may be without risk of injury. Organic manures *sour* rapidly in wet places, and injure fibres.

Peaches that have the yellows may be recovered by pruning into the old stump. Dead heart wood makes yellows,—the sap thus becomes obstructed, and there is no remedy, but to let the tree thus renew itself. The curl is caused by a rapidly changing temperature. Plant them where they will not push out by a few warm Spring suns.

Curl is as bad as curculio. If the young leaves get injured the fruit near them falls. Peaches should only be pruned when they lose vigor, or when necessary to correct form.

Gooseberries and Currants should have their weaker shoots thinned out, and a little of those left, shortened. It makes the fruit much larger. The foreign varieties mildew badly unless grown where the roots will be moist and cool in Summer, but not wet. All these mountain or high northern races, want a cool Summer soil. With the exception of the Cluster there has not been much improvement on the Houghton's Seedling which is the most popular of the more hardy American class. Of Currants the Red and White Dutch and Versaillaise are, we think, still the best.

Of Strawberries Wilson's Albany remains the *most generally* popular; deficient in flavor as it undoubtedly is. Of course they "may be set out now," but such hints are almost too stereotyped to be of service to our readers.

Of the Fruit Garden for February we may say in a general way—

Never plant on a cold, windy day, and do not plant fruit trees on a poor, thin soil. *Subsoil*, *drain*, and *enrich*, cannot be kept too prominently before the planter. If the trees grow too luxuriantly to bear well after this, it is easily remedied. We can plant dwarf trees, or root-prune, or practice Summer pinching and training. The last can only be done successfully by experts. Where skill cannot be employed, dwarfing and root-pruning will be extensively used.

VEGETABLE GARDEN.

In the Middle States the work for February will, for the most part, consist of preparations for future operations, and particularly for dealing with the manure question. All those kinds that are grown for their leaves or stems require an abundance of nitrogenous manures; and it is useless to attempt vegetable gardening without it. To this class belong Cabbage, Lettuce, Spinach, etc. The other class, which is grown principally for its seeds or pods, (as Beans, Peas, etc.,) do not require much manure of this character; in fact, they are injured by it. It causes too great a growth of stem and leaf, and the earliness—a great aim in vegetable growing—is injuriously affected. Mineral manures, as wood-ashes, bone-dust, etc., are much better for them. For vegetables requiring rich stable manure, it is better that they have it well rotted and decayed. Nothing has yet been found so well fitted for the purpose as old hot-bed dung: though, to the smell, no trace of "ammonia" remains in it.

In managing the vegetable garden the highest excellence should be aimed at. This is the chief source of pleasure in a garden. If one can take no pleasure in his garden,—if the watching of the beautiful processes of nature in furnishing him food,—and the many lessons they teach him, which he in a thousand ways can so pleasurably and profitably apply, have no charms or attractions for him, he had better give up gardening; for, assuredly, in most cases,—even to 99 in a 100 instances,—the market gardener will bring the vegetables to his own door cheaper than he can grow them. Amateur gardening should primarily be pursued for the lessons it teaches and the pleasure it affords; when it ceases to do this it should be abandoned.

One of the most interesting parts of a vegetable garden is a hot-bed for starting seeds early. The end of the month will be time enough for those who have not command of a large supply of stable manure, as the very low temperature we often get at the end of the month, soon absorbs all the heat the hot-bed possessed. It is in any event best to put up the beds in the warmest and most sheltered spots we can find, and to keep cold winds from the manure, by covering it with branches of trees or mats; and the glass should always be covered with mats at night. Tomatoes, Egg-plants, Peppers and Cucumbers, are the first seeds to be sown in this way. Cooler frames can be got ready for Cauliflower, Lettuce, Beets, Celery and Early York Cabbage, a little of which may be sown about the end of the month for the earliest crop. The Cauliflower is particularly a valued vegetable, and no expense spared to get them in perfection will be regretted when one's efforts are successful.

In the open air, should the weather prove favorable, as it often is about the end of the month, Peas and Potatoes may be planted. Frost seldom gets deep enough in new dug ground to injure them after this date.

In the more southern States the gardener will lose no time in getting in his Potatoes, Beets, Carrots, Parsnips, Peas, Spinach, Radishes, Lettuce, Onions and Salsify. These should be the first crops put in after the season breaks up for good. The earlier they are in the better. Asparagus, Rhubard and Horse Radish beds may now be made. Asparagus roots are generally planted too thickly to produce fine shoots;—they starve one another. A bed five feet wide should have three rows, and the plants set about eighteen inches apart. A deep soil is very important, as the succulent stems require every chance they can get for obtaining moisture. About four inches beneath the soil is sufficient to plant them. Rhubarb also requires a deep, rich and moist soil. Horse Radish beds are best made by taking pieces of strong roots, about one inch long, and making a hole about a foot or fifteen inches deep, with a dibble, and dropping the piece to the bottom of the hole; a clean, straight root will then rise up through the soil. Crowns or eyes are better than pieces of roots,—where they can be had,—and a rich, clayey soil better than a light, sandy one.

About the middle end of the month, or still later in the North,—say the middle of March,—Celery and late Cabbage may be sown. Here, we usually sow the second week in March.

In the Northern States, Broccoli and Cauliflower when sown in March as recommended, do not head early enough in Fall. In should be sown about the time of Early York Cabbage, in the hot-bed, during this month.

We have said very little about the selection of varieties, for it is one of the worst questions with which the journalist has to deal. It will not do for him to forget, as other men do; and he remembers how year after year new things come out with an "indispensable reputation," only to be superseded by something else in the year which comes. Still there is an immense amount of pleasure in testing new things; and no one can be blamed for some amount of weakness in this direction. It it not worth while to try every thing started by anybody. There are enough responsible parties offering good things to satisfy any one.

COMMUNICATIONS.

SHADE TREES.

BY J. JAY SMITH, ESQ, PRESIDENT.

(Read before the Germantown Horticultural Society.)

The questions introduced by our valued Secretary as to what are the three best street trees, and as to trimming in cities and towns, are as interesting as they are broad. It is a curious fact that if we examine the writings of the greatest lovers of trees, we find almost no allusion to the trimming process except in forest culture, because probably they do not approve of mutilating their pets. The art, if there be any such, should consist in trusting much to nature. Begin early with the business, first having a decided design as to what the tree shall become. Remove the branches that are superfluous or likely to become so, while young, when no injury will result. Take example from the fruit grower who forms his pear tree into a pyramidal or a fan shape; in short, who plans to have, and does have, just what he desires. If he wishes to spread the limbs on an espalier he finds no difficulty whatever in doing so. We can treat a street tree in the same manner, but we must know what is required, and give constant attention to the detail as the limbs progress. This, and this only, will prevent the necessity for mutilation when the branches have attained too great height or are too numerous. Watch and learn the proceedings of the accomplished fruit raiser. Who will do this, it may be asked; it is feared the numbers will be few, but without care of this kind the rapid growing specimens will often have to be cut, most probably mangled, disfigured and killed. This Society would do a good service by recommending a person with the requisite knowledge, and the probability is that our fellow citizens would, some of them at least, employ him. In a few years his results would be an example that would educate others. Trees of quick growth in towns with narrow streets require more or less trimming; it is in vain to disclaim against the "vandals" of the saw and hatchet, till some degree of education is instilled into the masses. It is equally in vain to have handsome, quick growing trees, such as most persons desire, without some attention. We should rather condemn the owner, who neglects his trees, than cast aspersions at the man, however ignorant, who obeys orders, and in whose power it is not to reduce an overgrown specimen without using his rough tools.

What are the three best trees to plant in streets at the north, is a question attended with some difficulty, because notwithstanding the use, the grandeur, and the beauty of timber trees, it is a fact that, compared with herbaceous vegetables, the number of species distributed over the world is comparatively small. The greater part belong to warm climates, for in the temperate zones, and in the regions of warm countries rendered temperate by their elevation, the number of genera of timber trees, according to the best authorities, that attain thirty feet in height, does not amount to a hundred. There are not above a dozen genera of trees, furnishing in all about thirty species, which attain that height, indigenous to Great Britain. Other countries, however, furnish other genera and species, from which to select. These we have in considerable varieties. The choice is restricted most painfully when we consider the circumstances we are reduced to in the selection. We cannot properly have fruit or nut bearers, nor even flowering trees, with safety to our windows or our heads; for there is a species of curculio, called in Paris a *gamin*, whose great delight is to throw sticks and stones at everything that pleases his fancy or his palate. We must therefore exclude from the usual streets our hickory, our walnut, our horse and native chestnuts, the honey locusts, (one of the most graceful of trees), and of course the apple, the pear, the paw-paw, and all fruit-producing trees. Then again we are restricted to what will flourish in cities and towns; evergreens will not succeed in smoky regions.

Then again, consider the conditions which we are subjected to. Our streets are narrow, often only thirty feet wide. The space is insufficient for flourishing trees, and no sickly tree or plant is worth preserving. As well admire a sick monkey or a dying cat as a plant struggling for life between a curb stone on one side, sand, brick and rubbish on the other, and the air and rain excluded from all; and yet, strange to say, we do sometimes see that nature struggles against such unnatural obstacles and gives us something to like, if not to admire, even though the planter may have failed to dig deep enough

or to supply pabulum for the root. The one tree which resists this confinement best is undoubtedly the silver maple; and if it were treated as I have suggested and cared for in its rapid progress, it would be the tree for our purpose. As a single specimen on a large lawn it assumes most of the characteristics we desire, if it has no near neighbor. It wants attention every week during the growing season if we expect good results. It throws up the pavement with its tuft of superficial young roots. The bricks must be removed and the tuft cut away with an adze or some suitable implement; properly done this does not injure the growth materially, the large roots being sufficient and having penetrated the soil. Therefore under the conditions named, I do not hesitate to recommend it as one of the three desirable street adornments where a better cannot be expected to grow. But if it is left for years without trimming, and thus is allowed to form tall and large limbs that must be cut away, mutilation in its worst form will result.

The sugar maple, however, should be preferred; and this or the red bud should be another of the three. The beautiful round headed Norway maple casts too dense a shade for the street.

The magnolias must not be forgotten; the two should be the cordata and macrophylla, the first producing yellow flowers twice in the season.

I sometimes think I would rather inherit Mr. Magnol's reputation for the name of magnolia, so graceful and tripping, than that of Bonaparte; and then how his family increases! He never knew he would have heirs called *Soulangiana*, &c.

The yellow wood, *Virgilia lutea* affords a good variety, also, when we consider what we shall select as our second choice. The deciduous cypress becomes in time a beautiful and valuable street tree; while the Chinese cypress, *Glyptostrobus sinensis*, lately introduced, is the most perfect of all pyramidal trees. We must also by no means forget the lindens.

And for the third, some of the oaks are to be chosen; while the Kentucky coffee tree *Gymnocladus Canadensis* has many valuable characteristics, and should be more frequently planted. And the varieties of the ash are admired by many very justly. The native beech, too, has advocates; while the true copper beech, when to be procured, would form a superb and unexceptionable ornament everywhere, especially in an avenue or on the street. The fern-leaved beech, *Fagus heterophylla*, with conical form, well defined outline, and deeply cut close foliage, is superb and rare. The Salisburia or ginko tree, should be introduced into our public plantings and even streets.

Objection is fairly made to the use, in this region, of the elm, so much admired in Eastern towns, because it is infested with worms; but the variety generally known as slippery elm *Ulmus fulva*, has no enemies, is equally graceful and valuable, and should be cultivated extensively.

Some varieties of the ash family make good street trees, but after all we are often narrowed down to what we can get. The *Acer pseudo-platanus*, among the maples, is not so rapid growing as the silver, but more rapid than the Norway or sugar maple. Among the oaks, prefer the macrocarpa, which is a fast grower.

A knowledge of all the different associations which belong to each particular kind of tree, as it must add greatly to the enjoyment derivable from them, ought always to form a part of the pleasure with which trees are viewed. We have a pleasurable sensation of the mind when we pick up a chestnut the ancester of which was planted by Washington at Belmont. The association of ideas thus connected with trees has given rise to what is called their moral and historical expression, as the oak for ship building, the pine and fir for house carpentry, and so on. The historical and geographical associations connected with trees are numerous, and of great interest. The platanus reminds us of the respect paid to this tree in Persia; the sweet bay, of its shoots being used by the Romans to crown their warriors; the vine and the olive, of their unknown antiquity, and the highly prized liquors and oil made from their fruits; and the cedar of Lebanon, of the esteem in which its wood was held by Solomon.

That there are difficulties in selecting has already been demonstrated, and when these are all over, comes another. The best trees and the right sizes are not always to be had when wanted. There may be plenty of them, but they are small, possibly, or too large, and they may be very difficult to transplant, as the holly and many others are. Most persons don't want to be bothered, nor do they desire to plant twice or three times, and they, forsooth, content themselves with what is on hand; it is very apt to be the silver maple. As our country gets older, and we have more extensive nurseries like Loddiges' in England, one can go thither and find exactly

what is wanted, and in every stage of growth. It is not yet so in America.

The subject has been considered in one aspect only. What are the best trees for streets embraces a wider range as streets become wider and enlarge into avenues of eighty or one hundred feet in width. Then our list for planting in good soil, unobstructed by curb stones and bricks, is immensely enlarged; and we can recommend the oaks, and hickories too, perhaps the tulip poplar and many others; but confining the subject to the usual plan of streets as exhibited here, the range for selection is rather limited. In most instances it is well to get a guarantee from the nurseryman that his plants have been twice transplanted, otherwise there is a risk of some deaths; with twice transplanted trees there is little to apprehend with careful attention.

I cannot close this short and very imperfect "paper" without a just tribute to our valued Secretary. To use a symbol only proper in connection with our topic, it does seem to me that he has been well planted in his present official place; and I am sure he will branch and grow exactly as good plantations do whether trimmed or not. We have to thank him for valuable suggestions; don't let it be said that we are curb stones, or rubbish, or mere sand, to obstruct his growth and usefulness. Long may he hold his pen to call out others and grow in value to serve the cause which we have so much at heart.

[The writer of this sketch, the successor of Downing, as the editor of the *Horticulturist* in its famous days, is still flourishing; an amateur at the age of seventy-five, and holds as vigorous and useful a pen as of old.—ED.]

PEAS.

BY GEO. A. LAW, ROSLINDALE, MASS.

After the busy season of the seed trade was over, and as a test of the growing qualities of my seeds, I sowed, in my trial ground, the following varieties of Peas, May the 12th: First crop, Daniel O'Rourke, Caractacus, Tom Thumb, Blue Surprise, The Cook's Favorite, Blue Peter, Burbidge's Eclipse, Dwarf Waterloo, Alpha, Little Gem, Advancer, White Gem, Champion of England, Yorkshire Hero, Prodigious, Tall and Dwarf Sugar, Omega, Superlative, William the First, Popular, First Crop Blue and Alpha.

They ripened and were exhibited in the following order at the Massachusetts Horticultural Society's Rooms, Boston: July 5th, William the 1st, First Crop, Caractacus, Daniel O'Rourke, Blue Peter, First Crop Blue, Tom Thumb and Alpha.

William the 1st (new) was the earliest, pods of a deep green color, well filled with large peas, flavor inferior. This pea is sown as it becomes known, and the price reasonable, will be the popular pea with market gardeners. One of our most extensive growers said, when they were exhibited, "this is the pea we have been looking for. I thank you for exhibiting it." First Crop Blue (new) as early as D. O'Rourke, and better flavor. Blue Peter 9 inches, pods and peas large, flavor good; can be grown along the edges of walks, and save space where gardens are small. Alpha, a good cropper of fine flavor, now superseding Advancer, being earlier. First Crop, Daniel O'Rourke, Caractacus, Tom Thumb, a difference of only three days, flavor the same.

Exhibited July 12th.—Superlative, White Gem, Popular, Advancer, Little Gem, Dwarf Sugar. Superlative (new), pods 6 to 7 inches long, flavor good, possibly owing to the very dry season. The pods with me did not fill out. White Gem (new), a good cropper, and medium flavor. Popular (new), pods long and narrow, well filled with large peas, flavor good. Advancer, flavor fine, a good cropper, now superseding the Champion of England, having all the better qualities of that popular variety, and the advantage of a dwarfer habit. Dwarf Sugar, a splendid cropper. Every one has his popular varieties, and some prefer this Little Gem, well-known variety. I consider the Blue Peter superior.

Exhibited July 19th.—Burbidges Eclipse, Dwarf Waterloo, Prodigious, Yorkshire Hero, Blue Surprise, Cook's Favorite, Champion of England. Dwarf Waterloo, one of the best of the second early dwarfs; flavor not equal to Burbidges Eclipse, but a splendid cropper; pods large and well filled. Prodigious (new), a good cropper and of excellent flavor; pods a deep green; very salable variety for market. Yorkshire Hero, pods large, well filled, of good flavor. Blue Surprise, an old variety, now passed over in the rush for new varieties; once very popular with market gardeners for second crop; a good cropper; flavor fine. Cook's Favorite, pods of a deep green color, well filled, and of a good flavor. Champion of England, a well-known popular variety, now being fast superseded by Alpha and Advancer.

July 25th.—Omega (new), a late variety, very prolific; flavor good; this like the Superlative, did not fill up in the pods, possibly from the same cause.

It was not a favorable season for growing peas, and they had scarcely a shower from the time they were sown till they were gathered.

THE STARK APPLE.

BY REV. J. H. CREIGHTON, LANCASTER, OHIO.

Some one in last *Gardener's Monthly* inquired for information concerning the Stark Apple. I will state my experience as far as it goes. The Stark is an apple of some good qualities,—large, hardy, a tolerable keeper, bears young and well; but in quality it is hardly second rate; is too solid—not to say woody; is inferior to very many other sorts; will not compare with Wagoner or Ben Davis. In my judgment it ought not to be propagated.

ORCHIDÆ NO. 13.

BY MR. JAMES TAPLIN, MANAGER TO GEO. SUCH, ESQ., SOUTH AMBOY, N. J.

Oncidium Ornithorhynchum.—Amateurs need not be frightened at this rather long name, and can call it the Bride Bill Orchid if they wish, for on close inspection a perfect beak can be seen in the flower, from which it takes its specific name.

This plant being a native of Mexico, will grow and flower well in a moderate heat with the simplest attention: it can be grown either in a well drained pot or basket, in a mixture of the usual Orchidæ peat and sphagnum.

Its usual time of blooming is in the winter, but we generally have it in flower at other seasons as well, which makes it more valuable. It produces graceful spikes of its delicate rose-colored flowers very freely, and they last a long time, and are very sweet scented. This being a comparatively cheap and very easily grown variety, should be in every collection. This was one of the first Orchidæ I learned the name of above twenty-five ago; the delicate perfume impressed it more on my memory than the size of the flower.

NOTES ON PICEA NOBILIS.

BY JAMES BARNES, EXMOUTH, ENGLAND.

Picea Nobilis, which has been found growing on the north-west coast of North America, the banks of the Columbia River, Mountains of California, &c., is coming to be one of the most beautiful and loveliest of trees in the landscape of this country, with its dark, bluish-green upper foliage, and clear white silver colors beneath the cones on the upper part and on the branches, from 8 to 11 inches long, and diameter of 2 inches or more. Male catkins about 2 inches long hang from the underside of the branches here in England, both male and female appearing in April. Is in bloom in May; grows on rapidly, and are full grown, and very heavy by July, the branches bearing down under the weight of a bunch of eight to ten cones. Their seed is fully ripe in September. The cones soon burst, and cast their seed abroad with every puff of wind if not gathered in good season.

There were plants at Bicton from 30 to 40 feet high—branched to the ground—that coned nearly thirty years ago, without showing male catkins until three to four years later, after which there was abundance of perfect seed, and thousands of plants rose from them ever since. Many now grown up, and large enough to produce seeds themselves.

A HISTORY OF SOME BLOOMING CACTI.

BY MISS A. G., READING, PENNA.

A lady of Maryland, who has been constantly successful in blooming her Cactus, gave the following account of her treatment:

When, in the fall, it is cool enough to remove these plants to the house, she places them in the cellar. She keeps them there till the following spring, and until the weather is warm enough to put them out of doors. They never fail to bloom. I saw them once during May; and though the leaves had an old and withered appearance, they were lined with buds on each side. These were the flat-leaved Cacti, or Epiphyllums, bearing pink or scarlet flowers.

Another lady told me of an instance of the effect of complete rest in producing bloom. A gentleman having received a rare and beautiful Cactus, direct from the tropics, waited patiently to see it bloom. After a long time, becoming discouraged, he set it away in the cellar for the winter, where it received no attention whatever, as it was entirely forgotten. Coming upon it in the Spring, during the cleaning of the cellar, he concluded, from its forlorn and dried-up appearance, that it was dead, and threw it out, pot and all, on a rubbish heap at one side of the house,

that was seldom visited. Happening to go to the spot during the summer, what was his surprise to behold the *abandoned* plant full of gorgeous blossoms, though the pot was partly broken, and lay aslant on the pile of rubbish.

I saw, lately, a Cactus bearing fine scarlet flowers. It is what is called, here, the Saucer Cactus; that is with flowers opening nearly flat like a saucer. This one blooms in the spring and *fall*. The owner trims off carefully all side shoots that branch from each single stem above the ground. The plant was not large, being about one and a half feet high. The pot was a glazed one, and, perhaps, five inches in diameter, the earth being ordinary garden soil (not sandy) mixed with considerable woods' earth. It was watered constantly, but had not been repotted for five years. The flowers had, latterly, diminished in size.

Last summer I saw, in Philadelphia, a large Cactus eighteen years old. It bore very large cup-shaped scarlet flowers. The pot was ten or twelve inches in diameter, the plant branching out on all sides in a luxuriant way. It had borne as many as forty flowers at a time. It was trimmed out every fall, but had not been re-potted for six years.

I described, in a former number of this magazine, a large night-blooming Cereus, belonging to Mrs. Gehr of this city, which had borne forty flowers during a season. Last summer it surpassed all previous summers, having had seventy-two open flowers. One night's display was twenty-one, another eighteen, and another eleven, the remaining number being scattered through the season. There is a kindly fashion here of keeping open-house for the exhibition of fine plants in bloom. This particular Cereus holds an annual levee, and has scores of visitors.

A Cereus speciocissimus, owned by Mr. Aulenbach, received calls for several days in succession. The visitors were supposed to have numbered five hundred. The blossom of this plant was of a brilliant scarlet, and shaped like a wide, open cup. It was about four inches in diameter. The inner petals shade off into a lovely lilac, or lavender purple. An experienced gardener told me, that at one time he possessed a plant that had borne forty flowers, (which seems to be the orthodox number). It is, however, of slow growth.

We have, what we presume to be, the Cereus triangularis. It bears an extraordinarily large flower, which is white, and said to be the largest of the blossoms of the Cacti. Ours has grown rapidly for the two last summers, and is now between four and five feet high. Its thick, dark green triangular stems present almost a stately appearance. It is, however, quite mulish in its disinclination to be trained. This plant was purchased, when small, of Mr. Thomas Fairly, of Druid Hill Avenue, Baltimore, Md.

I procured another Cereus, of George Such, South Amboy, New Jersey, for a lady of this city, which bears a flower said to be nearly twenty inches in diameter. The stem of this is round, and very much less than that of the Cereus grandiflora, and more pliable. It can easily be trained, and kept within convenient bounds for lifting about.

I saw one in bloom last summer, which had a stem similar to this. The flowers were larger than those of the C. grandiflora (or I have misnamed the latter), and much more beautiful. The outer petals were lined with a delicate lemon color. The silken stamens and pistil were of the same delicate tint. It was fragrant. The frame, on which it was trained, was about eighteen inches square at the top.

REMARKS ON THE CULTIVATION AND AFTER TREATMENT OF GLOXINIA, GESNERA AND ACHIMENES.

BY THOS. L. WEBB.

These are all natives of various parts of South America, and can be brought into bloom at any season by merely regulating their period of rest, so as to prepare them for starting into growth at any time of the year. The remarks that follow may be of some use to amateurs not possessed of a good hothouse, and who wish to grow a few of these fine objects in their greenhouse.

Before remarking, however, upon the subject of treatment, it will, perhaps, be of some benefit to those who have not paid attention to the cultivation of this class of plants, to state the fact that the leaves are the agents of the bulbs' (or tubers') maturity, and by which they collect and lay up a store of matter so essential to perfection in the flowers; so that it will be readily understood, that whatever has a tendency to promote healthy leaves, tends also to induce excellent bloom.

The treatment these tropical herbaceous plants require, so nearly agree, that they can be classed together for cultivation. The Achimenes are the smallest, with scaly roots, and I find do best grown in shallow pans. The Gesneras are larger tubers, and named after Conrad Gesner, a botanist of merit, of Zurich. The Gloxinias will form tubes from four to six inches in diameter. They were named after Gloxin, a botanist of Colmar.

At the present time—January—all those that are not already started into growth, should be stowed away in a dry place on a shelf, at the back or darkest part of the house, or they may be put with their sides turned up, under the stage, in a temperature not lower than 45° Fahrenheat, for it is not safe to keep the tubers colder; they are liable to rot: if above 55° to start into growth. There can, however, be some already started into growth if care has been taken to give the tubers a due proportion of repose. Debility, which is often seen in them, arises from improper management of the vital energies of the plant, being nearly exhausted for the want of rest. Therefore, those who would cultivate them with success, must carefully attend to periodical resting. As to growing the plants, it is the system of some cultivators to part them after they have commenced to grow, others, directly they are removed from their winter quarters.

In starting the roots of Gloxinias, (which may be done every six weeks if you have a hothouse) they should be taken out of the old soil, and repotted into four or six-inch pots, according to the size of the tubers, in a compost of light sandy peat and leaf-mould, and a small portion of well-rotted cow-dung, which will enrich it, taking care to give plenty of drainage.

The tubers of the Gloxinias and Gesnerias will only require to be pressed on the surface of the soil. Achimenes will require to be covered with at least half an inch of soil; then place in a warm, close frame in the greenhouse, so that they get plenty of light. There is nothing to beat a pit to grow them to perfection, with a good moist bottom-heat from a bed of tan, dung, or leaves,—the latter is preferable, being easily procured,—also a lasting nice, sweet temperature of from 60° to 70°, when they will make free growth,—give them plenty of water. It is as easy to grow good Gloxinias, Gesneras and Achimenes, as it is a few cucumbers; and an amateur can have them to do well in his greenhouse or pit. Use the syringe rather freely as they grow; and, as the temperature rises it will, with these, as most other subjects, induce clean and vigorous growth. The Thrip, one of the worst pests of our greenhouses, will attack this class of plants with avidity, more particularly the Achimenes. Even the bloom will not be spared if they are allowed to get ahead. They can also be well grown in ordinary frames, such as are used in the truck patch. About the middle of March prepare some good fresh stable manure, in the same manner as for early frame cucumbers, then let the same quantity of leaves be collected and mixed with the dung, sufficient to form a good substantial bed, with a steady heat of about 70°—let the dimensions of this bed be about three feet larger every way than the frame to be used—cover the whole with six inches of soil of any kind, or sifted coal-ashes, for plunging in the pots or pans. The end of March will be time enough to put in the tubers, taking care to use soil warmed to the temperature of your frame or pit; shut up close for a few days, and give no water. Open the sash every fine morning to prevent the heat rising above 75°. Aim at a night temperature of from 55° to 60°. After a few leaves have shown themselves, water carefully, and sprinkle over the leaves in the after part of the day, just before the sun is off the glass, and shut up immediately. Should we get a spell of cold weather, and the thermometer indicate a lower temperature, renew the heating material by removing the outer portion of your bed by cutting quite to the bottom, then replace with fresh, hot stable dung, or dung and leaves. This will not, however, require so much preparing as the dung for the original bed, as the excessive heat will not come in immediate contact with your plunged pots, your object being at this time to maintain a steady heat of 75°. Water of nearly the same temperature as the frame, or at least tepid, must always be used at this season,—and shade from the mid-day sun. As they start into flower, give more air and plenty of water; and as they expand, remove them from the frame to the greenhouse, first to the warmest, then to the coolest part of the house, to prolong their season of bloom. After they have done flowering, put the earliest batch in a warm place out of doors. Water moderately, each week giving less, to encourage them to go to rest. Later batches, after flowering, can be placed on their sides under the partial shade of trees, or a wall, where they will get sufficient sun to thoroughly ripen them. By the end of September, or early part of October, they ought to be all brought into their winter quarters until wanted to perform their routine of work again.

The following are a few good showy Achimenes: Ambroise Verschaffelt, white, with crimson eye; Carl Woolfurth, fine crimson; Carminata splendens, carmine; Longiflora major, violet blue; Longiflora alba, white; Margarita, pure white; Meteor, scarlet; Sir Trehern Thomas, crimson; and Mauve Queen. A few good Gloxinias.—Lauretta, blue; Brilliant, crimson; Fairy, white and violet; Model, pink; Optima, dark rose; Sanspariel, pure white. Of Gesnerias there are Zebrina splendens, Cinnabarina, Donckelaari, Purpurea, Velutina. There is a great variety of the three species, and all that is required is a trifling outlay in getting a collection, and care.

There is a striking Gloxinia that requires especial notice, namely, the old, almost forgotten Gloxinia tubiflora, which is a very distinct variety introduced from South Brazil. The tubers are not unlike potatoes in appearance, they throw out strong stems which grow and produce white tube-shaped flowers from two to three inches long. The plant attains nearly two feet in hight; flowers from the bottom to the top of the stem. No collection however small should be without this variety. It is also delightfully fragrant.

NOTES ON PEAS.

BY F. R. ELLIOTT, CLEVELAND, OHIO.

In the *Monthly* of December, K. writes touching experiments with a few varieties of Peas, and asks for others' remarks.

Like almost every subject of rural life occupation, this one of Peas has been so much experimented with and written upon, that there is really nothing new to say, yet possibly it may be of interest to K., and some others, if I give a repetition of statements of some of my experience in this line. You know, Mr. Editor, that all this work of growing and testing comparatively, year after year, side by side and repeat, is one of returns payable only in practical information.

Some years since, so much was written upon the best depth at which to plant Peas, that one of my experiments was made by planting the Missouri Marrowfat, in light, loamy clayey soil, at depth varying from one inch to twelve inches. The results were that the one inch deep came up first; but the two inch deep followed so quickly, that they both blossomed at the same time. The three inch and four inch deep were about on a par in showing themselves above ground, but they were three or four days later than the one and two inch,—did not blossom as readily, and the four inch deep made the strongest growth ere it bloomed. The productiveness was about alike, but the deepest planted four inches held out the longest. The five and six inches deep planted were again some one or two days longer in showing above ground, and did not grow off as readily at first as the one planted four inches deep. The vines were not much, if any stronger, than those at four inches, but they retained fresh longer, although the crop was not materially enhanced. The seven and eight inches deep planted were some four days or so later before showing above ground, and their start was not vigorous, but as the season gained in warmth, and so the soil, their growth was stronger than either of the more shallow planted ones, but the crop of blossoms and peas was not as good as that from the sixth inch depth of planting. The nine and ten inch deep planted came up, but they did not make growth or productiveness of value; and while the eleven and twelve inches planted, some of them came up, but it was not regular or satisfactory. My conclusion was that in heavy soil four inches deep, and in light warm soils six inches, promised the best results.

With this as my practical basis, I have been now over fifteen years annually planting of varieties at the same time and the same depth. I have found two, that of some varieties, my neighbors planting shallow—say two inches—while mine were at four inches, would gather Peas fit to eat one, two, three days ahead of me, according to the character and location of their ground, but their crop was of less number and shorter duration.

To write out my notes of all (over forty) varieties, that I have repeatedly tested side by side, would be, as I think, tedious to the reader, so therefore let me say, that of all the sorts yet catalogued, the Carter's first crop is the earliest; but Waiter's Caractacus is only one or two days later, and is a more productive sort. It is probably the best early market sort. These are of the round white varieties, and of the wrinkled and sweeter peas. A variety under name of Sutton's Emerald Gem, is of the earliest, almost if not quite up to Carter. This Gem is distinct from all others in its foliage, and pod being a lighter colored green.

P. M'Lean's Little Gem, Advancer and Blue Peter, are among the next best of my early wrinkled sorts, while Dexter and Laxton's Long Pod are two good sorts to follow. They may be surpassed by some of Laxton's newer sorts, but even now I am half disposed to throw them all out and take Eugenie for middle crop. And for later, Champion of England is well known, but as it is more liable to mildew than Yorkshire Hero, and not as large, nor any better pea, I am disposed to think the Hero will, when generally known and grown, be preferred.

TO CURATORS OF BOTANIC GARDENS.

BY J. M'P.

Winter gardening in the United States of America, and a respectful invitation to the Curators of botanical and horticultural gardens all over the World to assist it:—

It will be known to all of you that the rigorous winters of the Northern States of the American Union render anything in the way of out-door flower gardening quite impossible; but the tendencies of the people to cultivate the most suitable flowering plants under glass, so far as their means will permit, has not, perhaps, been so generally recognized outside of America. This tendency is, however, growing yearly, and it promises to be the chief future of horticulture under glass in this country.

Being satisfied that there are still many hundreds of plants known in cultivation which flower naturally during the six months of the year from October to March inclusive, but which are not grown here because their adaptability for decorative purposes are so little known, I would respectfully invite the curators of botanic and horticultural societies all over the world to increase the subjoined list of genera (already employed here), and kindly designate such species as are most remarkable for effect during the months in question, more especially if such genera or species are unknown or rare in commerce, I feel sure that those curators who can spare the time, will jot down a few of those things which are their pride during the period in question, and so aid in the dissemination of the beautiful in a country less favored in climate than that of *their* adoption.

List of tropical flowering genera grown in the United States for decorative purposes.

Anthurium,
Asclepias,
Aphelandra,
Æschyanthus,
Bouvardia,
Begonia,
Bougainvillea,
Canna,
Cyrtanthera,
Clerodendron,
Centrostemma,
Combretum,
Dalechampsia,
Dipteracanthus,
Epiphyllum,
Eucharis,
Euphorbia,
Eranthemum,
Francisea,
Gesnera,
Goldfussia,
Gloxinia,
Gardenia,
Heterocentron,
Henfreya,
Hibiscus,
Hoya,
Impatiens,
Ixora,
Inga,
Justicea,
Jasminum,
Libonia,
Monochætum,
Manettia,
Meyenia,
Pentas,
Pedilanthus,
Plumbago,
Russellia,
Rogeiria,
Rondeletia,
Sericographis,
Scutellaria,
Stephanotis,
Strelitzia,
Torenia,
Thunbergia,
Thrysacanthus.

SUB-TROPICAL.

Abutilon,
Acacia,
Azalea,
Ageratum,
Amaryllis,
Bignonia,
Chorozema,
Cobea,
Cestrum,
Cuphea,
Crinum,
Crassula,
Ceropegia,
Cuphea,
Coronilla,
Chrysanthemum,
Camellia,
Cyclamen,
Cineraria,
Dianthus,
Datura,
Daphne,
Erica,
Epacris,
Fuchsia,
Genista,
Geranium,
Habrothanmus,
Heliotropium,
Imatophllum,
Jasminum,
Lobelia,
Lopezia,
Lamium,
Lantana,
Lapagerea,
Luculia,
Mahernia,
Metrosideros,
Neirembergia,
Olea,
Oxalis,
Passiflora,
Primula,
Pitcairnia,
Polygala,
Rubus,
Rosa,
Rhododendron,
Rhapiolepis,
Rhyncosperum,
Salvia,
Statice,
Solanum,
Syphocampylos,
Tecoma,
Tropœolum,
Veronica,

Datura Knightii flora pleno.

Your correspondent, Mr. Webb, may, or may not, be aware that the above (and other species) is a most valuable winter blooming plant. I

have a small standard with about thirty expanded blooms at this time,—December 18th—and have had one or other in bloom since lifting; merely keep them growing.

SPECIFIC HEAT OF PLANTS.

BY PROF. BEAL, STATE AGRICULTURAL COLLEGE, LANSING, MICH.

Rev. L. J. Templin writes in the December number: "It is often observed, after the fall of of a snow, that what falls against the trunk and roots of living trees soon melts away at every point of contact with the bark, leaving a hollow space between the snow and the tree." He further notices that snow does not always melt away after falling on sides of trees, and gives some explanations.

I have often watched snow about trees. I never could see any difference between snow on living trees and snow on standing dead trees, (not rotten) of the same size and species. Both require some time to cool off early in winter, and snow will melt about one as quickly as about the other. The wind often blows the snow away from the crown of a tree, dead or living, or stumps as well. If dark colored, snow soon melts on south side.

PHILADELPHIA PUBLIC GARDEN SQUARES.

BY P. P. P., PHILA.

Ornamental gardening is the outward sign of civilization and refinement in all civilized lands. In the formation of cities spaces are made into ornamental gardens, and the houses around them are of the finest styles of architectural beauty, and are occupied by the most wealthy citizens. Many cities in Europe are celebrated for the splendor of their fine city public gardens. Their forms are squares, circles, crescents, ovals, triangles, &c. Philadelphia public gardens are her "squares;" just groups of ill arranged trees, with gravel walks and grass. The trees lining the walks are needed for shade, and are well set in some of the squares; but the trees *in* upon the figures are superfluous, and make derangement. They do not shade the walks, but injure the grass by their shade, and check the free circulation of the air; lesson the thrift of the edge trees, and prevent the natural spread of their branches, and so they grow deformed.

Too many trees upon pleasure grounds may be likened to too many cattle in a meadow; they all grow lean, unsightly and unprofitable. One row of trees upon the street side walks around the squares is enough. If they be twenty feet broad, set the trees four feet in from the curb-stones, then their roots can spread out before dipping down. Eradicate all the trees upon the divisions in the squares, and form neat beds upon them to be decorated with bedding plants, bulbous flowers, with showy annuals sown among them; the choicest dwarf shrubs and perennial herbaceous flowers. The various beds differently decorated, and the various styles of arrangement adapted, with different forms of the beds, will make a pleasing diversity. The borders or figures, alongside the railings, should also be decorated. There should be no trees immediately inside the railings if there is a row of trees on the outer side walk. The squares will then be airy, and ornamental, lightsome pleasure gardens. The lawn will be a beautiful green. The fountains should be in the *middle* of the *central circles*, like that in Franklin Square. Those in Rittenhouse Square are just where they *should not be*

"Independence Square," with the buildings, is the *most sacred spot in the nation*. It therefore should be made especially an ornamental garden, with a beautiful lawn, and decorated with neat groups of the choicest flowering plants, ornamental foliage plants, such as shrubs, bedding plants, hardy herbaceous, perennial flowers, &c., but without large trees. Set rows of handsome shade trees upon the street sidewalks around; they will grow up handsome, and form a beautiful garnishment to the inside garden. After all the city squares are ornamented, the people will call for the improvement of *Fairmount Park*.

If the public squares of Philadelphia are ever made ornamental gardens, the low, degraded portion of our citizens should not be allowed to use them as hiding places. Perhaps family keys let for small yearly rents, or annual tickets sold cheaply, may prevent the nuisance. Then ladies of refinement, with their children, will frequent the gardens for exercise and pleasure. It seems strange, that none of our city councils have considered the propriety of making our public squares ornamental gardens, to correspond with the beauty of our magnificent buildings. Our private citizens all decorate their house-yards with flowers and lawns, and our large cemeteries are real ornamental parks. All by individual decorations. Councilmen! "let charity begin at home," and pass ordinances and make appropriations for making ornamental gardens of our squares. Strangers visiting our city, and seeing the public squares as they now are, can only imagine that "Fairmount Park" is a *magnificent wild*. Procure gardeners of skill to do the work.

EDITORIAL.

TRAVELING RECOLLECTIONS NO. 4.

In 1857 the first "shanty" was set up at the foot of the Rocky Mountains, on the spot where Denver now stands, by a namesake of him who married Pocahontas; but not till 1859 was the first hotel built, and the place bore Colonel Denver's name,—now she is the proud capital, with, it is said, 15,000 inhabitants, of one of the most beautiful territories in the Union. These far away places seem like a dream. We take our old ideas and experience, but they help us little. We are told, for instance, that these places are dry,—there is little rain, and yet here we were in the midst of one of the heaviest storms of rain, thunder and lightning we ever experienced. Old Daily Rural life managed to get away from his keeper, Fuller, and went off on a lone expedition of some fifteen miles, and came back about midnight nearly drowned. Still there must be some truth in the common report, for little streams of water are led down every street along the curb-stones; and from the ditches the cottonwoods, used as shade trees, get a support. And then we have the experience of an intelligent French gentleman, who has spent a good deal of money in trying numerous trees and shrubs which he has imported from various places, and he testifies that the want of rain through long periods, is one of the worst things the gardener has to contend with, but not the worst, for the February climate is worse on vegetation than the want of rain. Almost always in the day-time the thermometer reaches about 45° in this month, while the night temperature is down to about 20°; and in this very dry atmosphere, a windy night of so low a temperature after a moderate day, is found very destructive. Thus many things which are perfectly hardy at zero in the east, cannot endure circumstances like these; and it is another good illustration of what we are often learning in gardening, that it is not mere temperature which decides the hardiness of things.

In vegetable gardening, and the average of farm crops, however, this part of the world excels. Any one who chooses to get up at dawn, as inquisitive people like traveling editors and correspondents love to do, will see a sight he can hardly believe, in the immense quantity of luscious looking vegetables of all sorts, being brought into the city. Radishes, turnips, lettuce, and many other things which one in the east never see in summer, abound here as if it were spring; and, indeed, to judge by these vegetable productions, one has to doubt that it is August, and falls back on the theory that in Denver it is spring-time all the year. This, however, is only at dawn-time, for in August the mid-day sun will often run up to 100°. Some will ask if this is in the shade; but these good friends must remember that shade as yet is one of the rare things in a town, where at one time trees were thought not able to grow. As soon, however, as the various enthusiastic experimenters sift out those things which will do well from those things which will not, we will talk about the thermometer in Denver shade. The time will come some day. Much finer vegetables and farm crops generally, can always be raised under systems of irrigation, than in nature's general way, if the principle of plant growth is well understood. Plants thus can get just the amount of moisture they require,—no more or less.

It is strange to note how rapid is the march of civilization in these western wilds. But two years before this visit, the writer walked the best part of the way between Denver and Pike's Peak, with the other naturalists of the party, collecting objects of natural history. During this journey of nearly one hundred miles, occupying with the occasional aid of the wagons of the party over three days, we rarely met a human being. There were a few ranches here and there. Now we took a comfortable ride by railroad; and gardens and farms, grain, vegetables and flowers were abundant. The narrow gauge road was

placed at our disposal; and stopping for our convenience, as objects of interest occurred, afforded us an excellent chance to see and learn. Here we examined a stock farm in which the rearing of brooded horses was made a specialty; there we examined the "rough and ready" grist mills, where Colorado grain is floured and exported to Boston; now we stop to examine the saw mills, where immense quantities of the heavy wooded pine, Pinus ponderosa, were being worked up into all sorts of articles; and there, best of all to the lover of nature, the train would stop to allow the admirers of fine scenery, or of flowers, to get out and enjoy themselves.

The "Rockies" must have been ashamed after our unexpected visit in 1871, and prepared for another occasion. Then our entomologists reported "no bugs;" and the botanists found little, except such as would not be looked at by floriculturists. Now abundance reigned. Not on the proverbial "blooming prairies" could there be a greater show. There seems to have been more rain, and a better distribution of it in this section of late years; but whether this is owing to the fact that the timber is all being cleared away with wonderful rapidity in order to serve the great wants of man in this part of the world, we shall leave to be discussed by Governors of States, like Pennsylvania, in their annual messages, or in scientific conventions, like the late annual one at Portland.

The chief ornaments of these desert wastes have not yet found an extensive home in cultivation, but well deserve to be. Here were many species of beautiful Pentstemons of all shades between blue and purple. P. glaber, and P. acuminatus, were particularly attractive. The white Mexican poppy (*Argemone hispida*), with white flowers over two inches across, and the large white Mentzelias, made a striking show. There are several species, yellow and white, all growing together. Dwarf Œnotheras embrace many species, Œ. triloba being very common. The flowers at evening make the plane look as if covered with rosy-white tinted wine-glasses. The scarlet bracts of the Castillija integra, and the white bracts of C. pallida, are abundant everywhere. The pale blue Lupin (*Lupinus argenteus*) is also common. And the Gentians, blue and purple, with the numerous yellow Compositæ,—not forgetting the rich winy crimson of the Convolvulus leptophyllus, which is a herbaceous perennial of striking beauty—these and others made a picture of floral beauty one will not soon forget.

As we said with the railroad comes civilization; and a party of us paid a running visit to "Camp Meehan," of two years ago, or at least its site, seven miles from the road; but instead of the "howling wilderness" of so very recent a period, we found a fashionable hotel "at $8.00 per day," and remarkably well filled with guests. Our party agreed that if ever a high price was justified, it was surely here. Quite as "stylish" as either Saratoga or Newport; there was real comfort, and enjoyable society. Formed in a wreath round the head of a fair lady here, I saw, for the first time in my life, living specimens of the male form of the Hop vine. It is remarkable that I never met it before in all my rambles; and those who only see cultivated as the "Hop" the female form, can have no idea of its graceful beauty. If any reader of these notes can favor the writer with a root of the male Hop plant for cultivation, he shall be held in life-long remembrance.

There were no evidences remaining that "Camp Meehan" ever existed here, but the names we were permitted to give to the locations, as first explorers, still remain, and are laid down in all the maps. The Canon Englemann, named by the writer in honor of his distinguished botanical friend at St. Louis, is quite famous for a celebrated mineral spring, "The Ute," which starts along its course. In regard to the wondrous beauty of this canon, of which the writer of this as an involuntary explorer, having been accidentally separated from his companions for the day—was perhaps the first white man ever to behold, a writer who has since seen it says, "the next point of interest is the 'Hiding Place,' which no visitor to the mountains should fail to see. Filling up the bottom of the ravine, and entirely hiding the stream, is a boulder of gigantic proportions, which forms a chamber of most remarkable character, into which access can be gained with comparative ease. Descending into the chamber, it is found to be almost entirely walled around, and paved with large boulders, thrown together in picturesque confusion. The waters of the stream seem to rise in various places from under the borders, which strew the floor of the cavern, and wander out again into day-light at the further end. The roof of the chamber is the gigantic boulder of which I have spoken. Its under side—the ceiling of the great chamber—is almost as level and smooth as if it had been tooled by a mason, showing a clear unworn line of fracture. The edges of this enormous boulder (eighty feet across) rest on boulders which form the wall."

When I discovered this cave in my original exploration, the mouth was so trodden and the marks were so recent by bears' feet, that I hesitated, alone and unarmed, to enter, to the amusement of some of my companions to whom I subsequently recounted the day's discoveries. This borrowed account is therefore placed in here for their benefit, who would, no doubt, have had more courage than I under the same circumstances. The water falls, the natural bridges, the filling in of the fallen rock from the heights above several hundred feet deep over the raging torrents, with trees of Abies grandis a hundred years old or more, growing on these rocks,—these and other matters of interest were fully detailed in my letter at the time. I find, however, that no one has since managed to penetrate more than a mile up this rugged and difficult canon, so that I suppose I am yet the only one who has seen all these beauties to their very source. Up this canon is the only tree I have ever seen of the elder leaved mountain ash, *Sorbus sambucifolia*, which will prove a great addition to our ornamental trees when introduced to cultivation. The berries are smaller and of a deeper orange than the common American mountain ash. In Engelmann's Canon the long beaked hazel nut, *Corylus rostrata*, abounds; which I believe none of us met anywhere else in the Rocky Mountains.

The canon named after our "Captain" Williams of the *Horticulturist* also retains its name, and a portion of our party on this occasion explored it to its source.

In Williams' Canon I had the opportunity to count the annual rings of wood in a very large stump of Pinus ponderosa, and found it was but 216 years old, so that it would seem that the coniferæ here do not live near as long as on the Pacific coast. The trees in fact do not seem so luxuriant. Our companion, Josiah Hoopes, who is familiar with the tree on the Pacific coast, would not, on our first visit, be pursuaded that the tree was the same species, until after we had been among them for many days. In the upper portion of Williams' Canon are a considerable number of the Pinon, Pinus edulis. I climbed a number of these trees, and examined the foliage from the ground to the summit, and find all the forms in the same tree which characterize Pinus Fremontiana, P. monophylla, and P. edulis; and have no doubt that these three species are only one. Up this canon also are numerous specimens of the Pacific red cedar, Juniperus occidentalis, which seems to have a perverse fashion of growing with flat stems. I measured one which was two feet wide, and yet no part of the transverse diameter was more than four inches. The concentric circles (?) must present a peculiar appearance in such a stem as this. This tendency is occasionally seen in the Eastern Red Cedar, but never to the extent of this. The prevailing arboreal vegetation of Williams' Canon besides these named, is comprised of the Rocky Mountain maple, Acer glabrum; Cercocarpus parvifolius—a strong shrub of the Rosaceous family, but with seeds having a hairy tail like a mist tree; and the two spruces, Abies Douglassii and A. Menziesii.

Ten miles south of Pike's Peak is the Cheyenne Canon, said to be the second grandest on the American Continent, in which our party spent another day. We found a grander before our journey closed, but of this more hereafter,—certainly such as it was, it ought to satisfy any reasonable worshipper of beauty. It is impossible to describe in language scenery like this, so that those who have never seen it can understand. I well remember how when I first stood within the gorge which forms Watkin's Glen, and looked upwards some two hundred feet, and attempted to count the periodical layers of sediment which formed its rocky sides, and knew that the wearing away by water alone had formed the immense chasm in which I was, life appeared almost an illusion, in which geological truths seemed but a trifling element; but here where the rocks towered up near *two thousand feet*, and yet so near at the top in some places that I could almost throw a stone across; and the water, not wearing its way through silurian mud, but cutting itself a channel through hard granite, how little did a human life seem!

The vegetation of this canon is particularly rich for the Rocky Mountains of Colorado. Abies Douglassii and Picea grandis, are the prevailing coniferæ; and Populus monilifera; a birch, B. rubra or Oregona; the Rocky Mountain oak, Quercus undulata; with Spireda demisa, and Sp. opulifolia, the chief deciduous trees and shrubs. Here our botanists found, in great profusion, a beautiful herbaceous plant of the Lily tribe, which, in order to give a popular idea of it, I might liken to a Star of Bethlehem, which will be popular in cultivation. It is

Zygadenus glaucus. The Rocky Mountain oak, which Mr. Watson has recently shown, should not be called Q. Neo—Mexicana, as we did when over the ground two years ago, but Q. undulata, is well worthy of introduction by our landscape gardeners. Though it produces acorns every year, few seem to grow; at least we only saw wherever we went, clumps of them evidently many years old. These trees sprang from seeds in the past, but the clumps were formed by suckers coming up but a few inches from the last year's stems, so that the whole mass would be as thick as a cane brake, through which it would be almost impossible to pass. The growth is very slow; in very rare cases was the mass over ten or fifteen feet high, grading down to the youngest shoots not more than a few inches high, the whole making a beautifully formed mass. The leaves are lobed much like the English and Turkey oaks, and of a beautiful glossy-green. It would give a character to our park and garden scenery quite different from anything we have now.

But we must not linger here. A monthly magazine cannot contain a tithe of what we would like to say, and another sketch or two must finish; so we will leave these scenes with regret, and again taking the easy riding and everyway successful narrow gauge cars, pursue our journey away towards New Mexico.

CRACKING OF THE BUTTER PEAR.

Few of us know how much of our successes are due to the labor of others; and when we do, we are slow to render them the justice which they deserve. Most of us learn something as we grow. It would be a strange and a stupid thing, if we did not live and learn. Many of us know that our early faith was wrong in many things; but to confess the error, and thank those who taught us the better way, is not among the every-day experiences of life.

It is now some twenty years ago since a Committee of the Massachusetts Horticultural Society, and *Hovey's Magazine*, asserted that much good resulted from scraping the rough old bark from fruit trees, and washing the trunks and main branches with something to make them bright and clean. We know that this enunciation made a great stir among the practical gardeners of this country. We are not sure but the writer of this was one of those who wrote to show how absurd such a doctrine *must* be. *We* had never practiced any such scraping or washing. *We* had had tolerable success. And then had not plants to breathe? Did they not breathe through the "pores" of bark? Would not washes stop up these pores? And was not the shaggy old bark for the winter protection of the stems? Besides this had we not the best works in vegetable physiology to back us up in all these things? The writer of this may not have written like that, but it is certain he thought somewhat in that strain. And thousands of the most intelligent gardeners of the day thought as he did. But Hovey and his friends were right. There are thousands now who scrape and wash their trees, and know how good a practice it is; but few know to whom they are indebted for leading off in the new track.

The fact is, none of us knew then, as we know now, the nature of bark. In some sense a leaf breathes; and bark, which is but a modification of leaf, may also "breathe" when quite young. After this it serves little more purpose than to hold the structure together, and to prevent too rapid an escape of moisture and heat. Trees, however, make a new layer of bark every year, and are really anxious to get rid of the old layers and thank us for our agency in the matter. Most plants contain in the bark at its formation the elements for its destruction. In most young branches we may note small specks, usually grey,—these we old-time gardeners used to take for "breathing pores." But they are, in reality, cork cells, and they grow with more or less rapidity according to genus or species. In some trees they grow in the direction round the stem, as in the birch and cherry; at other times they extend up and down the trunk as in the sassafras, chestnut and so forth. In some trees they grow slowly, in others more rapidly. Sometimes they meet one another in two, three, four, or more years; in others in not less than twenty. They advance, killing the bark as they grow; and when they meet they form the rifts we see on every old tree. The sassafras cells advance and meet in about five years, the apple and the oak in about ten, the chestnut in twenty-five, the beech rarely at all, and so on. We knew nothing of this twenty years ago, and even now physiological works do not teach it. We believe even Professor Gray's latest works refer to the cracking of the bark as due to the expansion of the tree. However, the process we have described is the natural one; and the law is that the tree really is

anxious to get rid of the outer bark; and if we can help it along so much the better.

As to warmth, it never seemed to occur to us old fellows, or rather fellows of the older time, that the younger and smoother bark ought to require "warmth" at least as much, if not more, than the old wood. The bark rarely dies till it is cut up into rifts by the process of cork cells. If a chestnut branch be scratched with a pin at twenty years old, it will still be found green and sappy close beneath the outer cuticle. Should not young sappy branches be protected as well as those in the twenty-five year or older wood? But fortunately we do not now need any of these philosophical reflections. Any one who has ever scraped the rough bark from his trees, and washed the trunks, knows well how great are the benefits derived from the practice. It makes a new tree. It is far better in many instances than a dose of manure. Even without any scraping, a simple dose of whitewash is a wondrous help. It appears to aid the bark to crack, and the tree seems to swell out its trunk and push out a growth quite surprising.

Still for all that we have learned about this bark scraping matter, there is yet much to learn. We saw, recently, a statement of a correspondent of some agricultural journal—we are sorry we have forgotten where, or certainly would give credit to what we believe so good an idea—that those pears which are liable to crack, even to the old white Doyenne, are entirely cured of the habit by thoroughly scraping off the old bark and washing the stems of the tree. Now if this is so, pear growers will be under an eternal debt of gratitude to this unknown friend. All we can do here is to examine the probability of the cure. One thing we know, that old trees, especially of the white Doyenne, which bear cracked worthless fruit, have, we believe, always a shaggy hide-barked look. The trees in many years never increase the trunk much in size. If they did they would throw off the bark as they grow. Hitherto we have regarded the old scaly bark as the consequence of the disease. But it may have much to do with causing it. We have explained the true nature of bark in order that our readers may understand just this case. We think most will agree with us that there is nothing more probable than that the old Butter Pear may be again given to us in all its ancient delicious tenderness, by just such a remedy as this. In most cases we should try such a suggestion, and philosophise after the fact; but we feel the matter of so much importance, and so likely to be true, that we depart from our usual rule of dwelling only on ascertained facts, in order that it may be extensively tried this season.

EDITORIAL NOTES.

DOMESTIC.

Corrections.—When persons not accustomed to public writing, send manuscript to the press, they are annoyed when the article comes out to find that there are some typographical errors. They have no idea how difficult it is to avoid these. In magazines which are *read*, from beginning to the end, so closely as the *Gardener's Monthly* seems to be, these become the more apparent; yet we take up serials with more pretentions than this journal makes, and find errors everywhere. However, we want to say here as an illustration of the difficulty, that an author of the highest culture not long ago contributed an article to our pages,—and stipulated that he should see a proof before publishing. In a magazine like ours, which must appear on a certain day, this is not always practicable; but in this case it was sent and returned corrected! Still the editor went over it afterwards, and found it necessary to make *thirty-eight* corrections, in punctuation, capitals, typographical errors, or syntax,—all in one article!

The Post Office.—In another column we have a note from a correspondent about Post Office matters. We have now some correspondence placed in our hands with the Post Office authorities. It appears that a bundle of papers came to our correspondent, and "printed matter" was written on it, so as to guide the clerks. $1.40 was demanded in consequence. Our correspondent appealed to Washington, and the letter of the authorities is before us. It admits that the law is an absurdity; and that it was never intended to be the law; but it *is* the law, and the Postmaster will enforce it! He hopes to induce Congress to alter it! What a Congress, to make a law it never intended!

Thanks to our Contributors.—We have rarely seen so many complimentary notices of the *Gardener's Monthly* as have appeared in the agricultural and horticultural exchanges this year, both in this country and in Europe. We feel deeply grateful for this recognition of our services; at the same time we feel how much is due to our excellent contributors, every one of whom has aided us without any thought of reward to them-

selves, but from an earnest desire to aid us in our work. We cannot but feel that the immense popularity of the *Gardener's Monthly* is as much due to them as to anything which the editor does.

H. A. Dreer.—Under the same title the flourishing business of our lamented friend will still be continued. His nephew, Mr. W. H. Smith, who has had most of the practical working of the business for years, still continues ; while the son, William F. Dreer, who for the past few years has had oversight of the seed farm at Riverton, joins him in continuing things. They are both excellent young men, and no doubt will maintain the business as highly as ever before.

An Essay on the Potato Disease.—It seems very strange that essays written to order, so to speak, and to be well paid for, are so often worthless for any practical purpose. All that we know of the Potato Disease and many other similar topics, has been through the voluntary offerings of public spirited men. Recently the Earl of Cathcart offered a premium of $500 for the best essay on "the Potato: its disease and prevention," and the Royal Agricultural Society appointed four gentlemen as judges. *Ninety-four* essayists competed, and the judges decided they were all worthless!

Death of Charles Lawson.—We referred, recently, to the misfortunes of this celebrated house. In addition now is the decease of Mr. Charles Lawson, head of the late bankrupt firm. Some of the late members now form the Lawson Company.

The Silver Thorn.—A large number of inquiries come to the office for plants or seeds of the Silver Thorn, a chromo representing which we gave to our readers in the December number. It will save trouble all round, if we say here that the editor has neither seeds nor plants for sale. The editor, being a nurseryman also, while knowing that the knowledge which this practical school brings ought to fit him all the better for his editorial duties, is also aware that in the minds of some people the magazine would naturally be made to serve the interests of his private nursery business. The letters received in regard to this Silver Thorn would seem to indicate that in some quarters there is yet this feeling. We may say that for years past plants and seeds have been widely distributed, and that many nurserymen and amateurs now have young hedges of it, and probably many have plants enough for their own private sales, without the necessity of advertising.

But the editor chose this present time to illustrate what he believes to be a great addition to the hedge plants of the country, because it happened to be a season when he had neither seeds nor plants to sell. While he enters the regular advertising field on an equality with other nurserymen, he prefers that the regular pages of the magazine, if it is to aid any one's special business, should help others' instead of his own.

Philadelphia Public Squares.—Beside the article of our correspondent in the regular columns, we have been asked to say a few words on the subject. There is no language which one could possibly use that would fitly express our opinion of their disgraceful condition. All through the summer season Independence Square was nearly as filthy as one of the back yards in Alaska Street. But we have a horror of fighting for the mere love of the thing. When we see the remotest chance of victory we can war equal to the best of folks. But in this case, and we say it with sorrow, we do not see the remotest chance of any permanent improvement,—no, not if our correspondent lives fifty years, will he see much more than he sees now. It is better to "let the dead bury their dead." At least we feel more interest in other questions.

The Age of President Wilder.—A Boston paper before us contains accounts of a pleasant surprise party, on the occasion of Mr. Wilder's seventy-fifth birth-day. Notwithstanding his age, he seems as active as ever, judging by a speech we find in another paper, on his re-election to the Presidency of the New England Genealogical Society. In this he took occasion to commend heartily the great Centennial Exposition, towards which horticulturists generally seem to be working as zealously as any class in the community.

Moving Bogs.—Some papers are exercised over a moving bog in Ireland. They are common in Florida. A sheet of water—a few floating mosses—seeds of larger plants sprouting on the moss—sand blowing and vegetation decaying in and about the living mass—and so in time till acres get covered, and trees grow, still having a body of water beneath.

The Eucalyptus globulus.—Every once in a while the newspapers drop politics and social scandals, and go vigorously into science, horticulture, or some such topic, about which those who discuss them know about as much as of the

mountains of the moon. This tropical evergreen is now their football and is supposed to be able to do many wonderful things. Our readers need scarcely be told that where the thermometer goes below the freezing point, the Eucalyptus globulus will not live. It may perhaps stand a degree or so in some situation, about the same as the Italian myrtle does.

The Oldest Horticultural Society —Some newspapers have taken Mr. Wilder to task because he said the Pennsylvania was the oldest Horticultural Society. New York Horticultural Society is said to be the oldest, founded in 1820; but the claim of the Penna. Society is, that it is the oldest existing one. Mr. Wilder is right.

Timber Culture.—We think that they who are urging the Government to take in hand timber culture, must be pretty well sick of the thing by this time. It, or they, can hardly make a postage law that will work as they want it. The timber law for the west is a greater farce than the postage law. Mr. R S. Elliott, who could draw up something sensible, if Governments ever consulted persons who knew the objects of the law, has, recently, written an able letter to Commissioner Drummond, showing how discouragingly the act to *encourage* "the growth of timber on the western prairie" works.

Propagating the Calycanthus.—It is said that the late Dr. Lindley offered a guinea to any gardener that would strike this plant from a cutting. No one ever claimed the money. But seeds and roots cuttings have now furnished most nurseries with them in tolerable abundance.

Fruit Trees in Grass.—We have never seen so many testimonies in favor of growing fruit trees in grass—provided they are well cared for as we always have contended—as we have seen the past winter. We do not quote what is said, as our own pages have been quite enough occupied with the subject in the past. But two of these magazines—the American *Rural Home*, of Rochester, and Mr. Berckmans' *Farmer and Gardener*, have coupled their remarks with kind reflections on the way the editor of this magazine has been for years misrepresented and abused for maintaining what has now become so popular, that we may be pardoned for occupying a brief paragraph with our acknowledgments.

Cracking of Fruits.—Chemists for the two past years have endeavored to show that the cracking of fruits is due to moist atmosphere, and think that after several days of rain the cracks occur. Believing that this is so, another very intelligent mind in Europe contributes a paper to show how this rainy weather *must* crack fruits! Why fruits crack, we think is already known to the readers of the *Gardener's Monthly;* but to show how all these philosophers are wide of the mark, we have only to bend a tomato branch down so that the tomato is covered with water, and though twenty-four hours submerged, we find it does not crack at all! Instead of writing for hours on an abstruse subject, why do not some of these men spend a few moments in an experiment?

FOREIGN.

M. Louis Van Houtte.—There are few who have not heard of this distinguished horticulturist. A correspondent of the London *Journal of Horticulture* thus describes him :

M. Van Houtte is a gentleman who has evidently turned the leaf of three score years but is not yet grey with time, and if his step has lost its spring it is due to a slight affliction common to sedentary habits rather than innate physical weakness. He is of robust physique and vigorous intellect, and subject to his penetrating vision a nervous man might feel himself the subject of stock-taking and being read all through. He has not much time for polished ceremony or to press courtesy to an unpleasant extreme. Like many another eminent man, he is a great listener, and seems content for his friends around him to do the conventional talk, himself sifting and speaking only to the point. His characteristic is soon seen to be matter-of-fact exactitude, which is one of the greatest acquisitions any man can inherit or acquire, and which, in the end, will serve him the best. Van Houtte's is a house of work. Each one has his or her duties in conducting this great business. Even the daughters of the household—of charming manners and genial—have their share in foreign correspondence, their maternal parent being chief cashier. Van Houtte spends his whole time in his business bureau. He has not been all round his nursery for three years, yet is cognizant of everything in every part of it. From five to eight every morning is occupied in arrangements with different foremen, and if it is never seen there the governing head is felt in every corner of the establishment. Surrounded by a large staff of clerks every detail of management is arranged here, the chief himself commencing work between one and two o'clock every morning, and working incessantly until eight P. M. with less than one hour's intermission. And this not at any par

ticular season but constantly from one year's end to another.

Value of Fruits and Vegetables in France.—During M. Thiers' Presidency, the vegetables for his table came from the public garden at Varsailles. He is now being sued by the Government for $30,000, the estimated value, it being contended that he had no right to use them.

Evaporation by Leaves.—The following by an Austrian scientist is old, but it may aid our friends who are investigating the influence of trees on climate:

Experiments made by Von Pettenkofer on the amount of water evaporated from an oak tree, show that atmospheric humidity, in so far as it depends upon the presence of forests, is promoted rather by the roots of trees drawing moisture from the earth, than by attraction exercised on rain clouds by the leaves. The latter serve rather as outlets through which the moisture drawn from the soil passes into the air. The oak tree observed by Pettenkofer was estimated to have between seven and eight hundred thousand leaves, and the total amount of evaporation in a year was computed to be eight and one-third times more than that of the rainfall on an area equal to that covered by the tree, the moisture exhaled by the leaves being equal to some 211 inches, while that from the rainfall was but twenty-five inches.

Quince for Stocks.—The French nurserymen report that in that climate the Fontenay stock is found much better for fruit trees than the Angers.

Dr. Hooker.—Dr. Hooker, the distinguished botanist, has been elected President of the Royal Society, the highest honor, probably, that science in England has to bestow.

The Larkspur.—Though so old a plant, the common garden Larkspur, is being so highly improved that many have now distinctive names. The *London Garden* says:

The collection of Larkspurs in the Wellington Road Nursery is now in fine bloom, and well worth inspecting. A few of the very best are—Attraction, azure blue, close spike; Belladona, very light sky-blue; Coronet, very fair dark ultramarine blue; Elegans, blue and lilac; La Belle Alliance, cærulean blue; Mdlle. Henri Jacolot, pale porcelain blue, close spike; and Madame Geny, blue and purplish-red.

Vegetation in the Isle of Wight.—At St Clare, Ryde, where Mr. Meehan (who, by the way, is father of the well-known and talented editor of the American *Gardener's Monthly*) is gardener, I saw a large number of plants growing permanently out-of-doors that we always treat as indoor plants on the mainland. These include Melianthus major, Eugenia Ugni, Kalosanthes coccinea, Mitraria coccinea, Eriostemon myrioporoides, Agapanthus umbellatus, Aspidistra lurida variegata, old-stemmed Heliotropes, and some others; a few of which occupied particularly sheltered places. At the same place too, in the hardy Fernery, I remarked the Bird's-nest Fern, that had withstood the last four winters uninjured, but the snails are extremely fond of the young fronds; Hypolepis exaltata, doing well; the Hare's foot Fern and Pteris longifolia, both in a thriving condition.

Here, also, I observed the common yellow Jassamine (J. revolutum), forming a dense bush on the lawn twenty-eight feet through, and flowering beautifully. The Jassamines, however, are not merely employed in the shrubberies and as drapery on walls, trellises and verandahs, but in Mr. Meehan's garden, I saw the common white variety used as a dwarf edging to the flower-beds, in which capacity, with a little yearly trimming and pegging, it had a charming effect, quite devoid of the stiff character of Box, Euonymus, variegated Japanese Honeysuckle, and many soft-wooded plants, whilst the sprayey laterals were remarkably floriferous. In the same garden, the Myrtles were also used as edgings, precisely like the white Jessamine. The effect was very attractive, and, in general climates, small plants of this aromatic shrub, from their persistent evergreen nature, will prove useful subjects for this purpose in the gardens of amateurs. Many are the fine specimens of the common Yucca or Adam's Needle (Y. gloriosa) scattered over the Isle of Wight, and some of them quite surpass anything I have seen on the mainland. They are massive and tree-like, rising with a clean stem from 7 to 11 inches in diameter for 4 or 6 feet, and then diverging into many ponderous tufted branches; the plants sometimes measuring some 9 to 12 feet in height. These grand objects, which are quite hardy even in favorable districts of the Highlands of Scotland, are robbed of their picturesque appearance by the presence of stays of hemp or iron that embrace and support the branches, and the supports from the ground that prop the plants and maintain their equilibrium under the pressure of fierce winds. These antique candelabra-like

plants, are not only stately objects whilst in leaf, but they present a striking aspect when in bloom, for it is no rarity to find three or four laterals blooming at once. In the flower-gardens at St. Clare I saw an isolated plant of Yucca aloifolia variegata 2 feet high, which had weathered with impunity the last two winters; it has grown a little, and is looking healthy.

[In connection with the above notice, from the London *Garden*, the writer of this may be pardoned for saying that whatever "talent" or usefulness the editor of the *Gardener's Monthly* may have displayed, is largely due to the excellent training of both his parents, still living as above referred to, much beyond the time often allotted to human lives. The Isle of Wight, when they moved to it from London, over forty years ago, though but seven miles from the mainland, was, before the age of steamboats, almost an unknown county. Ryde, now with perhaps 30,000 inhabitants, had but a few score of dwellings, little more than fishermen's huts. Some miles from schools, a mother's care, with but the book fo common prayer for a school-book, made him a first-class reader by six years of age. The father—one of the most intelligent gardeners of that age, as well as a thorough botanist of the Linneæn school, and imbued with enthusiasm for the highest excellence in his profession, found in his son a willing pupil. Before he was fifteen years of age, he had learned from his father all the names of the leading plants in cultivation, and most of the common wild plants of that quarter of the world.

Mr. M. the elder, was among the pioneers in fruit culture which has given so high a character to the British gardener. The celebrated vineries of Oak Hill—still famous for the fine grapes produced—were planted by him; and one of the most interesting occupations of the son's early youth was the "rummaging" among his father's horticultural correspondence, in which requests from his old-time correspondents for the manner of his surprising growths of the pine apple, were among the most common.

It was almost a matter of necessity at that time, that the writer had but a home education. If there be those who are disposed to admire the scholarship, it is but simple justice that the teachers be included in their praise.—ED. G. M.]

SCRAPS AND QUERIES.

CURRANT BORER.—*B. K., Cecilton, Md.*, "The shoots you send have been bored of their pith by the currant borer, *Bombecia tipuliformis*, we believe, though, we are not sure of an Entomological name from month to month. However, "currant borer" will do, as we believe it is the only species which thus injures the currant. On examining the shoots, you will find the puncture where the eggs were deposited indicate that the "worm" is there. Besides this, the bored shoots are always weak from the injury. The remedy is to cut away these infested shoots and burn them. It is easily kept down in this way.

POST OFFICE ECCENTRICITIES.—A correspondent places in our hands the following: "Merchandise can go by law in 12 oz. parcels, seeds in 4 lbs. Having to send seeds to some city firms, our postmaster was at a loss to know whether or which, if any packages were seeds, and which merchandise. To aid him, and not to cheat the government, I wrote on the package "seeds," and the other "merchandise." At the other end of the route my correspondents have had to pay a dollar letter postage on ten cent parcels. Tell me if this is the law."

[Yes, this is the law, and you will have to pay letter postage on everything so sent. It would, of course, be a gain to the government, if packages were marked so as to indicate the contents. Now, merchandise confined to 12 oz. parcels, can go through under the look of seeds. The Postmaster General regards it as the duty of every post-office clerk to open every package, so as to see whether it is seed or merchandise, and no doubt they do. And, no doubt, it is the seeds which fall out on these occasions which, as he says, "fill the offices with rats."]

MOULD AMONG ROOT GRAFTS.—A Kentucky correspondent sends us the following note: "Can you name an effectual remedy for the white mould on rot which attacks apple grafts during winter in cellars?

Last spring, out of a grafting of 76,000 apple, we lost three-fourths by this cause. We stored

our roots away in the usual manner, in the cellar of a brick house, size 16 by 16 feet; no ventilation or light except through a door facing northeast; grafted during January and February. Closed the door of the cellar, and during March, when spring opened, had occasion to visit the cellar. On opening the door the air rushed out, having a smell similar to that of a decomposed body. I examined the grafts, which were packed in boxes with sawdust, and found the top layers covered with this mould, and lower down in the boxes, every bunch was in a heated state of perspiration. I unpacked every box, thinking fresh air would arrest the malady, but in a few days I found the bunches had dried somewhat, and the bark of both scion and root at the junction at the ends and bruised parts were dead to one-fourth of an inch from each cut or bruise. I re-grafted some of the roots, cutting off the dead parts, and they, too, were afterwards attacked by the mould, and died.

We have had this trouble for four or five years, and as yet we are unable to say what is the cause. We have thought it was lack of ventilation. This fall I had four air grates put in this cellar near the ceiling, and had the walls thickly coated with a sulphur and lime wash, have since packed away the stocks for this winter's grafting as usual, and to-day (December 15th,) discover the whole side of the root pile, *i. e.*, the portion exposed to air and light, covered with the mould. I should have thought, were this mould composed of fungus, lime and sulphur would surely destroy it.

[Apple grafts have to be kept in a temperature just above frost, and we have never known much injury where this condition is complied with. We should suppose there was too much warmth, and that this in the confined cellar was favorable to the growth of the fungus. Where this fungus is liable to appear, sawdust would favor it still more. Good fresh earth would be much better for packing in, under such circumstances. We have, however, had no experience with such severe cases as these, and should be glad if those who have had more knowledge would help us in this trouble.—ED. G. M.]

GOLDEN ARBORVITÆ.—*E. D., Rochester, N. Y.*, sends us a specimen of Golden Arborvitæ, with the following note: "Enclosed is a seedling American Arborvitæ, four years old. In the summer months it is of a light yellow, and from October to May is a bright golden, and the more exposed the brighter it is."

[This is of a beautiful golden yellow. It must, however, be remembered that gold color in American Arborvitæs is no novelty now. The value will depend on form and habit.]

PINUS INSIGNIS.—*R. D., Waukegan, Ill.*, writes: "I am glad to see that you have called the attention of Southern sea-side planters to the Pinus Insignis.

"I have grown them from seeds (one season in considerable quantity), but could not bring them through the first winter, so I think they must be grown where there is no frost.

"I have no doubt it will grow on almost pure sand, from its resemblance to the Maritima, in the seed bed, sending its roots to a great distance. It makes one foot growth the first season. This is double the height that can be got out of any other California pine I have tested, and three or four times the height of most others the first year.

"The seeds can be had much cheaper than most California Pines, and as they are of small size and nearly all germinate, they could be grown almost as cheaply as the common hardy kinds."

CLIMBING DICENTRA.—*W. H., Newcastle, Pa.*, writes: "I have been asked for a Climbing Dielytra, as several ladies tell me there is one a climber, but cannot tell me where it can be procured. Please answer through the *Monthly* if you know of one, or whether it is a humbug?"

[Adlumia cirrhosa, the "Allegheny vine," is no doubt referred to.]

LAGRANGE PEACH.—*B., Central Ohio*, writes: "This fine late Peach seems to be dropping out of the catalogues. Is there something wrong with it, or is it simply the desire for *novelty?* or is there a better fruit of its season? and if so, what?"

OLD MIXON CLING PEACH.—*R. J.*, says: "My trees of this variety are dead. Where can I obtain it *true* again? I never saw a better Clingstone Peach."

[We suppose there ought to be no difficulty about getting this true. Indeed, we did not know there was a spurious one.]

SINGLE AND DOUBLE FLOWERS.—In reply to some queries of ours in the *Rural Carolinian*, Mr. Meehan, of the *Gardener's Monthly*, some time ago expressed the opinion that "double flowers are grades towards masculinity, and that whether a seed germ becomes of one sex or the other depends on the amount of nutrition it is able to assimilate in a very early stage of life. The lowest power of assimilation produces the double flower. In one capsule are many seed germs. Some of these will not have the life principle so thoroughly incorporated in them as the others through a defective supply of a certain kind of nutrition, and will yield double flowers sooner than others. The reason is that on the first formation of flowers, the plant is still devoting much of its nutrition to plant growth. After that is satisfied, it gives its whole attention to perfecting seed." This seems reasonable, and may explain a class of the phenomena referred to by us, but does it happen that seeds from the same package, sown in different seasons, or under different conditions of soil and situation, will (as has occurred in our own experience and that of others) produce in one case nearly all double flowers, and in another nearly all single ones?

[The above we put by some time ago for further remarks, but in the press of various matters has been overlooked. We hope our friend will not think we were tired of his questions. We are always pleased to see these kind of questionings of nature. Our readers like them, and we cheerfully respond so far as we can.

There is no doubt that though the tendency to the male or female principle in the seed is due to peculiarities of nutrition while the seed is forming, external influences which affect vitality also have some power. Thus it used to be very fashionable with English gardeners thirty years ago, to pay especial attention to the culture of the Balsam or Lady Slipper as it is called in American gardens; and they believe that the older the seed the more double would be the flowers. We believe it really was so. With age there is, of course, a more or less weakened vitality, and this will accord with our views already expressed, and excellently condensed by the *Rural Carolinian* in the paragraph copied. This branch of the law of sexes in plants, however, requires more careful study than has been accorded to it.]

TAKING UP DUTCH BULBS.—*Mrs. J. S., Pittsburgh, Pa.*, asks: "Should Dutch bulbs be taken up after flowering, and kept dry as we buy them in the stores, after they have flowered? I would rather leave them in the ground if they would do as well."

[Not quite so well. The soil is more or less impoverished, and the off-sets make too many plants crowd together, and they thus interfere with one another's development. If it is not desirable to care for them out of the ground, they can be taken up after the leaves are dead, the young small ones taken away, and then the larger ones replaced in the ground. Still they will do tolerably well for a few years without any taking up.]

GROWTH IN THE WINTER TIME.—*I. H. J., Memphis, Tenn.*, writes: "In a recent article in the *Gardener's Monthly*, I think you wrote as if you thought the roots of trees grew all winter, and that the buds enlarged as the roots grew. I find no reference to this in Downing's *Theory of Horticulture*, and would be glad to know if this is a fact or only conjecture?"

[We do not know why the physiologists referred to make no mention of the fact. It was well known before their time. DuHamel long, long ago, proved it very conclusively, and we have over and over again in the *Gardener's Monthly* shown that the principle *must be* true, and the important part such knowledge plays in practical gardening.]

HOLLOW CELERY.—*B., Brooklyn, N. Y.*, asks: "Can you tell me what is the best kind of celery to sow, with the certainty that it will come solid? My employer is very particular about good celery, and for the past two years mine has been more or less pithy, and it annoys me very much."

[This is one of those questions we cannot answer with any satisfaction. We once thought it was in the variety, and was very particular to buy only seed that had the word *solid* to its name. But we now know that all varieties will sometimes come pithy, but why we do not know. Still we think there is more tendency in some celery to come pithy than others. We said *all kinds*, and yet we are not sure that we ever saw a short but chubby kind known as the Boston market pithy. Try this kind this year.]

PANSIES.—*B., Brooklyn, N. Y.* "While writing about celery, please tell me if it is worth while trying to keep over the same kind of pansies by cuttings, from year to year, as they do in England. I have some nice sorts I would

like to keep. Excuse these questions. I am only two years from the old world, and find I have many things to learn. They tell me pansies degenerate, and must be always raised from seed."

[The flowers become smaller and smaller through the season as the weather gets dry and warm, but the plants raised from cuttings, or division of the roots which does just as well, produce the same flower next spring without any degeneration.]

PINES IN VIRGINIA.—A correspondent says: "I have collected on my lands in Virginia some specimens of Pines, which I send you for identification. We have not Michaux at hand, and Loudon is deficient in this particular.

"One of the specimens, you will observe, is marked 'spruce pine,' by which it is known throughout tide-water Virginia. It is worthy of notice on account of its durability, as compared with other yellow pines. Some years ago we cut some thousands of pine bean poles, all sorts as presented, without discrimination. Last summer, a wind-storm prostrated large numbers; on examination, exhibited the fact that none blown down by reason of decay were of the *spruce* variety. When dug up later in the season, the marks of the axe, when being sharpened, were as distinct as when first made, whilst others were rotten and worthless. A very important fact, we think, with reference to future planting, for railroad ties, fence posts, etc. I think this spruce is distinct from P. glabra of Walter. See Hoopes, page 82.

"The specimen marked 'inops,' has always been called by this name, but begin to doubt least it is *mitis*. What say you?

"The specimen termed 'fox tail' is, I think, identical with the 'ball' of the further south. Years ago, noble trees were pointed out to me near Charleston, etc., as of that kind, they were nearly like, in general aspect, the *palustris*. In Virginia, this fox-tail grows to large proportions, adapting it to the saw. It is also of rapid growth. From notes, I find that at fifteen years from the seed, 'it will cut,' as is the expression of that country, thirty cords to the acre. The *lumber* is fair, but not durable when exposed to the weather."

[The "bull" or "fox-tail" appears to us like the *P. glaber of Mx.*, but we are not sure about it. Cones would decide, or some one familiar with these common names could inform us. Spruce Pine is Pinus mitis, and the rest are all P. inops.]

WEATHER AT HARRISBURG, FRANKLIN CO., OHIO.—*E. M.* writes: "On the 7th and 8th instant we were visited by the heaviest storm of sleet ever known in this part of Ohio. The storm came from the east, and on that side of trees the ice was an inch thick. In old orchards, apple, peach, and cherry trees were broken badly, and in our native forests the trees were much injured. On my own grounds the peach trees suffered the most; my cherry and ornamental trees but little, though many of the latter had their branches bent to the ground."

BOOKS, CATALOGUES, ETC.

HORTICULTURAL PERIODICALS.—It is pleasant to note the improvement which is being made in horticultural periodicals, showing, we think, that horticulture is encouraging publishers to greater efforts. The London *Garden*, now in its third year, has been a marvelous, though well deserved success. The *Gardener's Chronicle* to keep pace with the progress, has dropped agriculture entirely, and is so wonderfully well edited, that no intelligent horticulturist can afford to be without it. In our own country our neighbor, the *Horticulturist*, makes some good progressive moves. It has adopted our style of double columns, and two excellent members of our strong corps of "corresponding editors"—Mr. Josiah Hoopes and Mr. James Taplin—will perform similar services for it. The January number is a good one, and we wish our co-temporary every success.

TRANSACTIONS OF THE WISCONSIN HORTICULTURAL SOCIETY.—1873: *from O. S. Willey, Secretary.*—This, the third of the series, is a handsomely printed and bound volume of some two hundred pages, and is also profusely illustrated. It is printed at the expense of the State, even the engraving being also paid for out of the State funds.

Fruit culture does not seem to have been highly encouraging in the State. President Stickney, however, alluding specially to pears, "is not willing to give them up." The "blight" seems the great trouble with pears in Wis. The apple, he thinks, in the best localities, rarely fails to make paying returns.

Mr. Morrow contributes a paper on *scattering suggestion*. He regards, what most of us have to do, extravagant statements, as among the greatest enemies of fruit culture; and among other sensible things, makes an earnest plea for adornment of homes, as well as for the mere gratification of something to eat. Among the illustrations are the apples Pewaukee, Weaver Sweet, "resembling Maiden's Blush, and a wonderful bearer,"—a native of Ohio probably. H. M. Thomas has an article on insects, in which he regards the canker worm as more injurious to the apple in Wisconsin than all other insects combined. He discusses the probability of the insect (*Anisopteryix pometera*) being a native origin, and distinct from the European. Insectivorous birds destroy the worms in countless numbers. He thinks Wisconsin should have a State entomologist. J. C. Plumb has an essay on *adaptation;* J. M. Smith on *market gardening*, —*new varieties from seed* by G. P. Pepper. In the course of his remarks he says that seedling apples usually retain the form and habit of the parent tree; but the fruit widely varies. The whole chapter is very interesting, dealing as it does with facts rather than opinion. Mr. Joseph Pollard, the excellent gardener to the Hon. Alex. Mitchell of Milwaukee, has a very interesting paper on *greenhouse* and *pot plants*. There are several other interesting horticultural articles, especially one by Mrs. D. Huntley on *Rural Homes*. In regard to deciduous trees, Mr. J. M. Smith called attention to a source of confusion in Appleton's Cyclopædia, in which three different kinds are called "White Elm." In regard to the qualities of Elm timber, Mr. Pepper said, from a practical working among timber, that the Red or slippery Elm (*Elmus fulva*) was far ahead of any other species for toughness. The species was not a good shade tree. The White Elm (*Elmus Americana*) is best for this purpose. He refers also to the "Brook Elm," but we are unable, by the description, to make out the species referred to.

In *keeping fruit*, Mr. Charles Waters barrels apples, keeps in shade and cool till cold weather comes; then *buries the barrels four inches beneath the surface of the ground*, leaving them till spring, or till wanted. He thaws them in the cellar when needed. Duchess of Oldenburg, exhibited at the February meeting had been kept in this way,—they had been frozen; but freezing under ground did not seem to hurt them. Russets and Romanites had been kept till June in this way. Mr. Willey has a paper on conservatory plants, and there are several others of more or less interest.

NEW AND RARE FRUITS.

STARR'S PROLIFIC CHERRY.—*The Canada Farmer* says: "A cherry of considerable promise has been lately introduced, that originated in Nova Scotia, and is there known as *Starr's Prolific*. It is a hardy tree, bearing most profusely, and the fruit bears a close resemblance to the Mayduke.

Mr. James Dougall, of Windsor, has raised a very early cherry, ripening before the Early Purple Guigne, and quite equal if not superior to it in flavor. It was exhibited by him at Chatham, last summer, and was much admired for its earliness and good quality.

THE ARNOLD APPLE.—*The Canada Farmer* says: "Another apple that has commanded the attention of the pomologists by its marked excellence, is the product of cross-fertilization accomplished by Mr. Charles Arnold. A flower of the Northern Spy was impregnated with the pollen of the Wagener and Spitzenburg, and from the seed or the apple thus worked upon, the tree was raised which bears this fruit, which in form is much like a Wagener, yet having the coloring of a Spy. This apple is of medium size, having a yellow flesh, which is very tender, and juicy, of 'very good' quality, if not 'best,' presenting a blending of the flavor of the Wagener and Spy. We learn that the Fruit Growers' Association have made arrangements with Mr. Arnold

to grow a sufficient number of the trees of this variety to enable them to distribute one to each member as soon as they can be raised."

STARK APPLE, *R. J. B.* says, "would probably not be valuable in Louisiana. In southern Ohio it seems to fail in its keeping qualities; while it is not so *attractive* as Ben Davis and some others. It is, as your Louisiana correspondents writes, a very fine grower, and it is no doubt well worthy of trial north of 41°, especially on clay soils."

A SEEDLING LADY APPLE.—*J. H. C., Lancaster, Ohio*, writes: "It may interest some of your readers to know the result of an experiment tried with the seed of Lady Apple. It being of peculiar appearance, I was interested to know what the seed would produce, and after waiting eight years, had the pleasure of seeing a tree and the fruit without grafting. I know I might have fruited it sooner, but preferred to to have a whole tree of it. The fruit is precisely like the parent in shape and color, only the colors seem brighter. In size it is almost as large again. In quality, like the parent, but a little more piquant."

A NO-CORE APPLE.—*T. S. R., New Florence, Pa.*, writes: "We have an excellent winter apple here in Ligonier's Valley cultivated in a few orchards near the centre of the valley, known by the name of Menocher's No-Core. We know of no finer apple than this; and it is truly named "*No Core*," as there is scarcely the resemblance of a core in it.

Mr. Jas. Menocher, who has it most extensively in cultivation, gave me its history as follows: His grandfather, previous to the Revolutionary war, was one among the first pioneers to western Pennsylvania, and settled in Ligonier Valley, and planted an orchard of seedling apple trees on a part of the same tract of land that James the grandson yet owns, on which his father was born, and upon which he lived during his natural life.

During the Revolution the inhabitants of the valley were almost entirely annihilated: men, women and children were alike the victims of the Indians' tomahawk and scalping knife, those only escaping who left all they owned and secretly fled through the mountains to join their friends in the eastern part of the State.

When peace was restored, and the refugees returned to look after their improvements, they found that their cabins, and everything that would burn, had been burnt to ashes. Mr. Menocher's young orchard had been cut down, and the stumps burnt by fires built upon them, lest they should sprout, so determined were the savages to complete their devastation. But notwithstanding all this, one of these stumps did sprout, and when found was growing, and was carefully protected, on which, perhaps, the first apples grew in this, the largest, and taking all things into consideration, the wealthiest valley in Pennsylvania. But when fully matured it was found to lack both core and seeds; and although one of the very best of apples, above mediocrity in size and a good keeper, and almost a hundred years old, it has never, to our knowledge, found its way out of the immediate vicinity of its origin, while hundreds of varieties not half so valuable have been propagated extensively, and many of them sold by tree peddlers at enormous prices.

Our valley, and the great valley of the Conemaugh, though scarcely known by name in your great city, has originated more new and good varieties of the different species of fruit, than any other part of the same area within our knowledge.

But I have noticed in the last number of the "*Gardener's Monthly*," that my friend, Mr. W. L. Akers, of Johnstown, is one of your correspondents. If he succeeds as well in that line as he has done as superintendent of the best garden within forty miles of Johnstown, you may learn more from his pen than from any other source in the area of these valleys. I hope he will make known to the world that the best flavored small fruits of almost every species are to be found growing wild in our valleys and mountains, which, when carefully cultivated, many of them surpass in excellence anything ever yet brought from other States, or what is worse, from Europe. For I have found by sad experience, that the farther anything in the fruit line is brought, so much the more worthless for cultivation in our soil and climate, and to this hundreds of the fruit growers in Westmoreland and Indiana counties can testify. Rev. Mr. Walker dug up and cultivated White Fox grape found growing wild on the bank of Tub Mill Creek, two miles from here, which produces abundantly a well flavored grape of the largest size I have ever seen. I saw one of those grapes measured, which was three inches and three quarters in circumference,—equal to one and one-forth inches in diameter.

NEW AND RARE PLANTS.

LA BELLE CARNATION.—Tree or perpetual-flowering Carnations are so valuable for supplying, during the winter season, cut flowers for the button-hole and hand bouquet that we gladly welcome any addition to our present list of varieties which possesses either distinctness or superiority to those already in cultivation; hence the pleasure we feel in directing the attention of our readers thus prominently to the new white-flowering variety, *La Belle*, and which has been recently introduced to public notice by the raiser, Mr. James Blackley, Leyton. This variety differs from all other varieties in cultivation in producing very large and double flowers possessing the most delightful fragrance, combined with a remarkably robust and free-flowering habit. As regards its constitution, it may be considered the forerunner of a new race of varieties of the highest possible value. Hitherto the greatest drawback to the cultivation of these flowers has been their want of vigor; but in this variety there is no lack of vigor. The specimen in question was trained to a trellis, about five feet in height, and three feet in diameter in its widest part, which is completely covered. The trellis, notwithstanding its comparatively gigantic dimensions, was completely covered with a healthy growth, and, although the plant had been in full bloom for the last four or five months previously, it was fairly furnished with fully-expanded flowers, and the buds could be numbered by the hundred. From the manner in which it was trained, it was computed that the main stem had attained a length of not less than sixteen feet, although the age of the plant does not at the present moment exceed three years.

The growth of this variety is slender and wiry, making rapid progress and producing fresh shoots or flower-buds at every joint. On some of the side-shoots buds were produced at every two or three inches, or shoots arranging from eighteen to thirty inches in length, so that the produce of a specimen of the size of the one to which allusion is here made would be simply enormous; and therefore two or three specimens should be grown wherever cut flowers are in request during the winter season. It may also be trained over the interior walls of the greenhouse where space could be spared for one or more plants; or it may be trained just under the glass if more convenient; but for general purposes it will probably be found that training to a balloon-shaped trellis will be the most preferable plan.

The flowers, which are of the purest white, are very large and smooth, and perfectly double, and highly fragrant, and for either hand or button-hole bouquets will be found of the highest value.

With respect to the means adopted for the production of this specimen, Mr. Blackley has been good enough to furnish us with the following particulars: "The compost which has been used, and which would also suit the varieties already in cultivation, is prepared by mixing a moderate proportion of road-drift with mellow turfy loam that has been laid by a sufficient length of time for the fibrous roots of the grass to decay. Before using the soil it is necessary to examine it carefully for wireworms, which must be destroyed, for they are, as most cultivators are aware, great enemies to carnations, picotees, and pinks. They must not be overpotted; and at each shift sink the ball of soil low enough in the pot to bury two or three joints underneath the soil. From the joints so buried healthy fibrous roots, which will be of immense service in promoting a healthy and vigorous growth, will be produced. Young shoots will also push from the joints, and from these flowers of the finest quality may be gathered. When planted outside for training over trellises or up walls, the border should be top-dressed with a compost prepared as directed above, in such a manner as to bury several of the lowest joints, for the purpose of encouraging the production of new roots and fresh growth.—*Gardener's Magazine.*

ARUNDO CONSPICUA.—We are surprised that the beautiful Arundo conspicua is not more frequently cultivated as an ornamental plant. To our mind it is far superior in beauty to the Pampas grass, of which so much is thought. It has these advantages over the Pampas. Though nearly as large in stature it has much less foliage compared with the flowers, and therefore is not so lumpish in growth, whilst still it has sufficient to furnish it. Then the flower spikes come up in good time in summer, and are in full beauty for some weeks before the bad weather sets in, while the Pampas barely comes into

flower before the autumnal rains and frosts mar its beauty. The Arundo, moreover, seems to be quite as hardy as the Pampas, for in dryish situations on the Bagshot sand formation, it grows and flowers freely year after year, while the Pampas does no more. The lovers of the picturesque should be on the look-out for so fine a garden ornament.—*Gardener's Chronicle.*

HORTICULTURAL NOTICES.

ACADEMY OF NATURAL SCIENCES.

From the current volume of proceedings, we take the following:

In compliance with a resolution of the Academy, Mr. Meehan read the following:

OBITUARY NOTICE OF ELIAS DURAND.

"In an institution like ours, devoted wholly to the study of the natural sciences, it is meet, when a distinguished member passes away, that we pause to ask ourselves what science has gained by his illustrious career; and, by reviewing the details of his useful life, derive new encouragement to press onwards in our studies. Thus shall the good which a man doeth live after him; for surely of all men the scientist liveth not in vain.

"We are proud that in the history of science so many members of our body hold a distinguished place. Among these great names, that of our late associate, Elias Durand, will always be gratefully remembered. He was elected a resident member of the Academy in 1852, and his whole life has been one of continuous devotion to science.

"Elias Durand (Elie Magloire Durand) was born in Mayenne, France, on the 25th of January, 1794, where his father, Andre Durand, was recorder of deeds, and in which Elias, the youngest of fourteen children, received his education. In 1808, he commenced a four years' study under M. Chevalier, eminent as a pharmacien and scientist, and to whose kindly interest in his success, Mr. Durand was fond of attributing his successful course in life. In the fall of 1812 he arrived in Paris, and attended the scientific lectures of Thinard, Gay-Lussac, Lefevre, and Ginault, and a course on general literature by Andrieux. He received a commission as assistant pharmacien, and after examination, was complimented by M. Parmentier, Inspector-General of the Pharmaceutical Department of the Army, by being placed on the head of the list of applicants, and soon was ordered to join the 5th corps of observation on the Elbe. He presented his commission to Field-Marshal Kellerman, and joined the army immediately at Magdeburg. He participated in most of the battles which followed, taking part especially in the bloody one at Leipsic. At the battle of Hanan, he was one of about a dozen who succeeded in crossing a stream, out of some hundreds who were killed or wounded in the attempt, and was captured by the enemy; but the officer in charge, in pity at the awful destruction which had left so few, suffered them to go free after a short detention. On the downfall of Napoleon, he resigned his commission, notwithstanding the opposition of his Chief, M. Lodibert. Years afterwards, when this distinguished gentleman was President of the Pharmaceutical Society of Paris, he remembered the former young man of twenty, but now in the United States, and proposed his name in a highly complimentary manner for membership in that institution. Leaving the army, he entered the drug store of M. Fretand, at Nantes, directed the chemical manipulations in the apothecaries' garden, and lectured to the students on medical botany. On the return of Napoleon he at once rejoined the army, and served during the celebrated one hundred days, as one of the National Guards. On the 15th of June, came Waterloo, and on the 26th, the allies entered Paris. Durand, with his strong Napoleonic tendency, was continually under surveillance, to escape which he sailed for the United States, arriving at New York on the 1st of July, 1816. Proceeding to Boston, Bishop Chevrus, a distant relative, introduced him to the leading scientists of that city, and he became superintendent of the chemical laboratory of a Mr. Perkins. After a few months, considerations of health led him into a similar position with a Mr. Wesner, at Broad and Race, in Philadelphia, but he found it necessary soon after to abandon this pursuit, and devote himself to pharmacy exclusively.

After a short residence near Baltimore, he obtained a letter of introduction to Dr. Troost, who at that time was engaged in the manufacture of alum and sulphate of iron, but who lived at Cape Sable, twenty miles away. Mr. Durand's diary gives a graphic account of this journey, made on foot, in deep snow, through a dense pine forest, in the depth of winter, and with but two houses on the whole track, one of these a country inn filled with pictures of murders of whites by red-skins, and other phases of Indian life. He tells of his subsequent meeting with Indians; his fear of his life, but found kind treatment from them; his taking the wrong trail in the dark, and finding and stopping over night at a farm-house, and of the kind treatment he received there, ending in his being sent under care of a slave to Dr. Troost's the next day. Notwithstanding what he had formerly been through, this little circumstance seems among the most impressing events of his life. He describes Dr. Troost as a gentleman of very primitive appearance, leading a sort of backwoodsman's life, but exhibiting the most unbounded generosity and kindly feeling. He could not assist him in getting employment, but he urged him to make his home with him for a while, as "he was much in need of some educated person to talk with." He spent two months with Dr. Troost, and there is little doubt but that this incident tended to confirm his already decided taste for natural history. By the influence or Dr. Troost, he became chief clerk in the establishment of Mr. Ducatel of Baltimore, whose daughter he ultimately married. Mrs. Durand died in 1822; and his daughter, the only child by this marriage, in 1836.

In 1823 Mr. Ducatel retired from business, leaving it to his son Jules, afterwards professor of chemistry in the Baltimore Medical School, and State Geologist of Maryland, and he took Mr. Durand into partnership with him. At the end of the year he withdrew from the partnership with the view of opening a store in Philadelphia. He went to France, returned to New York in April, 1825, and immediately after opened his store on the south-west corner of Sixth and Chestnut, in Philadelphia, which ultimately became one of the most distinguished pharmaceutical establishments in this country. His interest in his business was not merely that of a trader; he carried into it the same love of science which endears his memory to us to-day. The first contribution to the Journal of Pharmacy was from his pen; and the catalogue of the Royal Society of London gives a long list of valuable papers contributed by him to various magazines and institutions, on matters connected with this branch of science.

To us he will ever be remembered as a botanist. During all the long years referred to, his devotion to this department of natural history never flagged. His store was the resort of the most intelligent; and botanists sat at his right hand. His purse assisted many a botanical traveler; and thus it was that the collections of Nuttall, and many other valuable herbariums fell into his hands. They did not, however, always come to him in this direct way. He loved to tell of his being told of a lot of plants which had been stowed away in a loft for many years, and which he could buy cheap; and after paying little more than the price of waste paper, he found to his surprise that it was the herbarium of Rafinesque, which for so long a time had been the home of innumerable rats. His pains-taking accuracy and industry had early gained him a reputation; and a wealthy young gentleman of Ohio, determining to study botany, and anxious to purchase a herbarium to begin with, was referred to Mr. Durand, who sold his to him at ten cents a species, amounting to about $1000, which will give some idea of the extent of his labors at that time. His own distant collections were not numerous, but in 1837 he made an extended exploration of the Dismal Swamp in Virginia, and in 1862 another through the mountains of Pennsylvania. Shorter excursions with Count Survilliers, Joseph Buonaparte, and other scientific men, were numerous.

In 1852 he retired from business in order to devote the remainder of his life to botanical science. His first great work was to add to the herbarium of our Academy desiderata which his own could supply. In this way we came into possession of a large number of Nuttall's plants, besides numerous others. Indeed, the North American Herbarium of the Academy, as it now stands, is mainly the work of Mr. Durand. While in Europe in 1860 he found the herbarium of the Garden of Plants at Paris deficient in North American species, and on his return devoted much of his time to preparing his collection for that institution. He took the major part there in 1868, and left by his will the balance to it, making in all about 15,000 species, in which institution they will be preserved separately as the *Herbier Durand.* He presented

his botanical library to the Academy of Natural Sciences, and his library of chemical and pharmaceutical works, together with a herbarium of medical plants, to the College of Pharmacy.

The first great contribution to botanical literature after his retirement from business in 1852 was the "*Plantæ Prattenianæ Californicæ*," published in the Journal of the Academy in 1855–58, and about the same time in the same volume "*Plantæ Kaneanæ Grœnlandicæ*," being the plants of Kane's two voyages to the arctic regions; and also during the same period, in connection with Dr. Hilgard, in the same journal, the "*Plantæ Heermannianæ*," being the collections of Dr. Heerman, the naturalist attached to Lieut. Williamson's survey of the Pacific Railroad. In 1860 the botany of the Salt Lake of Utah, in Am. Philos. Transactions. In 1861 he gave in the proceedings of the Academy an account of the Arctic plants of Hayes' expedition; and in 1862 an article in the Bulletin of the Paris Acclimatization Society on the vines and wines of the United States, which attracted much attention in Europe. He is also the author of a memoir of Andre Michaux, and also of his friend Nuttall, which, from his intimacy with this great botanist, he was enabled to make the best one written.

For two years past age seemed to tell on him rapidly, and his regular attendance on his appointed and much loved duties in the Academy was broken up. During the past year his brain gradually softened, until, on the 14th of August, 1873, he peacefully passed away, in the 79th year of his age, leaving an only son by a second marriage, who has already distinguished himself in one branch of his father's favorite studies: and a memory which we, his associates in this Academy, will long, gratefully, and fondly cherish.

From such a life how much the world may learn! Here is a young man surrounded by difficulties, but who was never appalled or turned aside from the zealous pursuit of knowledge. It did not interfere with his business success, as it is a popular fallacy such studies tend to do, but it aided him to the highest eminence in his profession. It brought him into contact with many kindred spirits in this and similar institutions, which in turn fanned his enthusiasm, and added to the great pleasure he took in life. His benevolent spirit overflowed wherever the wants of man were to be relieved; and in the added facts to science, he knew, as we all know, that he was bequeathing a legacy to posterity which would benefit it for all time to come.

CONNECTICUT BOARD OF AGRICULTURE.

The *Pomologist* has issued the following circular to Connecticut fruit growers, or, we suppose, fruit growers elsewhere:

You will confer a favor by answering the following questions:

What has been the degree of productiveness of your orchards this year? What varieties have yielded most and best fruit.

Have your Apple and Pear trees suffered from blight, the depredation of insects or any other cause? Please give details of your experience, and the list of fruits you would recommend.

I would ask particularly of the Quince. How much of this fruit is raised in your town? Mention any who make quince growing a specialty, or who have attempted to do so. Have the trees suffered from the borer, or any other insect? Detail any facts concerning the quince you may observe.

Mention any interesting experience with the culture of small fruits, and the names of successful cultivators in your vicinity.

Any specimens of new fruits that may have originated in your town, not generally known, would be gladly received, and you will also confer a favor by sending a small package each of such varieties as will keep, to the winter meeting of the Board of Agriculture, which will be held December 17, 18 and 19, at Meriden, where a table of fruit will be on exhibition and trial.

ARBORICULTURE.

We solicit facts concerning any noted timber or ornamental trees, either cut or standing; their history, size and value. Also the proportion of woodland in your town, either original forest or recent growth.

Also any attempt to plant the white pine, chestnut, oak, ash, birch or other valuable timber plantations, with details or suggestions.

To what extent have ornamental trees been set in your streets and public places?

We solicit correspondence with the many intelligent fruit growers of our state, and shall be quite glad to receive and give, so far as possible, any suggestions and facts which may tend to enhance the fruit interest in our state.

P. M. AUGUR, *Middlefield*,
Pomologist of the Connecticut Board of Agriculture.

FOR FRUIT, FOR ORNAMENT,

TREES

FOR PLEASURE, FOR PROFIT.

WE ASK YOUR ATTENTION TO OUR

Thrifty, Symmetrical and Well-Ripened Trees.

PEAR, Standard and Dwarf PEACH.
APPLE, do do PLUM.
CHERRY, do do QUINCE.

SMALL FRUITS:

Grapes—Currants—Raspberries—Blackberries—Strawberries—Gooseberries.

ORNAMENTAL.

WEEPING AND STANDARD DECIDUOUS EVERGREENS.

Common and Rare Evergreens.

TREES WITH PURPLE AND GOLDEN FOLIAGE.

FLOWERING SHRUBS—Some of them having richly variegated leaves.
CLIMBING VINES—such as the Sweet Honeysuckle, Brilliant Clematis, &c., &c.

Tea Roses, Moss Roses, Running Roses, Perpetual Roses.

☞ This old and reliable establishment offers from an extensive assortment, trees and plants of great vigor and hardiness, having been produced upon a heavy clay soil, in an unusually favorable location.

ORDER DIRECTLY OF US, AS WE EMPLOY NO AGENTS.
CATALOGUES FREE—WRITE TO US.

500 Acres of Nursery. T. C. MAXWELL & BROS., Geneva, New York.

AMONG MANY VARIETIES OF

New Evergreens

Fully described in our Ornamental Catalogue, we call especial attention to the four following

RECENTLY INTRODUCED BY US.

Their Novel Beauty and Hardy Nature

Afford reason for the high appreciation with which they have been received, both here and in Europe.

"GEORGE PEABODY." An American Arborvitæ of the richest golden yellow, 2 and 3 year plants, $3 each.

"VICTORIA." Also an Arborvitæ of a fresh green color, tipped with white. 2 and 3 year plants, $5 each.

"MAXWELL'S DWARF SPRUCE." (Norway.) Very small, round and compact; a curious little tree. 5 year plants, $5 each.

"GLORY OF THE SPRUCES." (Am. White.) Leaves a soft green, tipped with bright golden yellow. 3 and 4 year plants, $5 each.

CLEMATIS JACKMANII.

A hardy vine of vigorous growth, bearing continuously from July until frost a wonderful profusion of

Flowers measuring from 4 to 6 inches across of a

RICH VELVETY PURPLE COLOR.

For a trellis or bedding plant there is none suitable to our climate that is more effective. We have twenty-five other varieties of

CLEMATIS.

ROSES.

5000 La France.

Description—Color a beautiful pale peach, rose centre; very large and full; a very free blooming Hybrid Perpetual; strong vigorous habit.

This sort contrasts finely with the scarlet varieties.

10,000 WHITE TEA AND NOISETTE,
25,000 SCARLET AND PINK
ROSES.

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Are carefully selected, and comprise the most desirable sorts Small, well-rooted plants will be

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On receipt of price.

6 Choice Roses for	$1 00
13 " " "	2 00
6 Variegated-leaved and Flowering Shrubs for	1 00
13 " " " " "	2 00

T. C. MAXWELL & BROS.,
Geneva, New York.

feb2

his botanical library to the Academy of Natural Sciences, and his library of chemical and pharmaceutical works, together with a herbarium of medical plants, to the College of Pharmacy.

The first great contribution to botanical literature after his retirement from business in 1852 was the "*Plantæ Prattenianæ Californicæ*," published in the Journal of the Academy in 1855-58, and about the same time in the same volume "*Plantæ Kaneanæ Grœnlandicæ*," being the plants of Kane's two voyages to the arctic regions; and also during the same period, in connection with Dr. Hilgard, in the same journal, the "*Plantæ Heermannianæ*," being the collections of Dr. Heerman, the naturalist attached to Lieut. Williamson's survey of the Pacific Railroad. In 1860 the botany of the Salt Lake of Utah, in Am. Philos. Transactions. In 1861 he gave in the proceedings of the Academy an account of the Arctic plants of Hayes' expedition; and in 1862 an article in the Bulletin of the Paris Acclimatization Society on the vines and wines of the United States, which attracted much attention in Europe. He is also the author of a memoir of Andre Michaux, and also of his friend Nuttall, which, from his intimacy with this great botanist, he was enabled to make the best one written.

For two years past age seemed to tell on him rapidly, and his regular attendance on his appointed and much loved duties in the Academy was broken up. During the past year his brain gradually softened, until, on the 14th of August, 1873, he peacefully passed away, in the 79th year of his age, leaving an only son by a second marriage, who has already distinguished himself in one branch of his father's favorite studies: and a memory which we, his associates in this Academy, will long, gratefully, and fondly cherish.

From such a life how much the world may learn! Here is a young man surrounded by difficulties, but who was never appalled or turned aside from the zealous pursuit of knowledge. It did not interfere with his business success, as it is a popular fallacy such studies tend to do, but it aided him to the highest eminence in his profession. It brought him into contact with many kindred spirits in this and similar institutions, which in turn fanned his enthusiasm, and added to the great pleasure he took in life. His benevolent spirit overflowed wherever the wants of man were to be relieved; and in the added facts to science, he knew, as we all know, that he was bequeathing a legacy to posterity which would benefit it for all time to come.

CONNECTICUT BOARD OF AGRICULTURE.

The *Pomologist* has issued the following circular to Connecticut fruit growers, or, we suppose, fruit growers elsewhere:

You will confer a favor by answering the following questions:

What has been the degree of productiveness of your orchards this year? What varieties have yielded most and best fruit.

Have your Apple and Pear trees suffered from blight, the depredation of insects or any other cause? Please give details of your experience, and the list of fruits you would recommend.

I would ask particularly of the Quince. How much of this fruit is raised in your town? Mention any who make quince growing a specialty, or who have attempted to do so. Have the trees suffered from the borer, or any other insect? Detail any facts concerning the quince you may observe.

Mention any interesting experience with the culture of small fruits, and the names of successful cultivators in your vicinity.

Any specimens of new fruits that may have originated in your town, not generally known, would be gladly received, and you will also confer a favor by sending a small package each of such varieties as will keep, to the winter meeting of the Board of Agriculture, which will be held December 17, 18 and 19, at Meriden, where a table of fruit will be on exhibition and trial.

ARBORICULTURE.

We solicit facts concerning any noted timber or ornamental trees, either cut or standing; their history, size and value. Also the proportion of woodland in your town, either original forest or recent growth.

Also any attempt to plant the white pine, chestnut, oak, ash, birch or other valuable timber plantations, with details or suggestions.

To what extent have ornamental trees been set in your streets and public places?

We solicit correspondence with the many intelligent fruit growers of our state, and shall be quite glad to receive and give, so far as possible, any suggestions and facts which may tend to enhance the fruit interest in our state.

P. M. AUGUR, *Middlefield*,
Pomologist of the Connecticut Board of Agriculture.

FOR FRUIT, FOR ORNAMENT,
FOR TREES FOR
PLEASURE, PROFIT.

WE ASK YOUR ATTENTION TO OUR

Thrifty, Symmetrical and Well-Ripened Trees.

PEAR, Standard and Dwarf PEACH.
APPLE, do do PLUM.
CHERRY, do do QUINCE.

SMALL FRUITS:

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ORNAMENTAL.

WEEPING AND STANDARD DECIDUOUS EVERGREENS.
Common and Rare Evergreens.
TREES WITH PURPLE AND GOLDEN FOLIAGE.

FLOWERING SHRUBS—Some of them having richly variegated leaves.
CLIMBING VINES—such as the Sweet Honeysuckle, Brilliant Clematis, &c., &c.

Tea Roses, Moss Roses, Running Roses, Perpetual Roses.

☞ This old and reliable establishment offers from an extensive assortment, trees and plants of great vigor and hardiness, having been produced upon a heavy clay soil, in an unusually favorable location.

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AMONG MANY VARIETIES OF
New Evergreens
Fully described in our Ornamental Catalogue, we call especial attention to the four following
RECENTLY INTRODUCED BY US.
Their Novel Beauty and Hardy Nature
Afford reason for the high appreciation with which they have been received, both here and in Europe.
"GEORGE PEABODY." An American Arborvitæ of the richest golden yellow, 2 and 3 year plants, $3 each.
"VICTORIA." Also an Arborvitæ of a fresh green color, tipped with white. 2 and 3 year plants, $5 each.
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"GLORY OF THE SPRUCES." (Am. White.) Leaves a soft green, tipped with bright golden yellow. 3 and 4 year plants, $5 each.

CLEMATIS JACKMANII.
A hardy vine of vigorous growth, bearing continuously from July until frost a wonderful profusion of
Flowers measuring from 4 to 6 inches across of a
RICH VELVETY PURPLE COLOR.
For a trellis or bedding plant there is none suitable to our climate that is more effective. We have twenty-five other varieties of
CLEMATIS.

ROSES.
5000 La France.
Description—Color a beautiful pale peach, rose centre; very large and full; a very free blooming Hybrid Perpetual; strong vigorous habit.
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INTENTIONAL SECOND EXPOSURE

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Will be forwarded by mail, post-paid on receipt of price.

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Allen's, R. L. Diseases of Domestic Animals	1 00
Allen's, R. L. Rural Architecture	1 00
Allen's, L. F., American Cattle	2 50
Allen's, R. L. & L. F., New American Farm Book	2 50
American Architect	7 00
American Agricultural Annual, paper 50 ; cloth	75
American Horticultural Annual, "	75
American Bird Fancier (Brown's)	30
American Farmer's Encyclopedia	6 00
American Weeds and Useful Plants	1 75
Art of Saw Filing	75
Architecture, Modern American, Cummings & Miller	10 00
" Principles and Practice of, By Loring & Jenning	12 00
Baker's Fruit Culture	4 00
Bassett on Cranberry Culture	30
Barry's Fruit Garden	2 50
Bell's Carpentry made easy	5 00
Bement's Poulterer's Companion	2 00
Bement's Rabbit Fancier	30
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Bicknell's Village Builder, 77 plates	2 00
Bommer's Method of Making Manures	25
Boussingault's, J. B., Rural Economy	1 00
Browne's Trees of America	6 00
Breck's New Book of Flowers	1 75
Bridgeman's American Gardener's Assistant	2 50
Bridgeman's Florists Guide	1 00
Bridgeman's Fruit Cultivator's Manual	1 00
Bridgeman's Kitchen Gardener's Instructor	1 00
Buist's Robert, Am. Flower Garden Directory	1 50
Buist's, Robert, Family Kitchen Gardener	1 00
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Carpenter and Joiner (R. Riddell)	7 00
Carpenter and Joiner's Hand Book (Holly)	75
Charlton's Grape Grower's Guide	75
Chemistry of the Farm (Nichols)	1 25
Cleveland's Villas and Cottages	4 00
Cobbett's American Gardener	75
Cole's, S. W., American Fruit Book	75
Cole's American Veterinarian	75
Cooper's Rural Hours	2 00
Copeland's Country Life	5 00
Cottage Gardener's Dictionary	3 50
Dadd's, Geo. H., American Cattle Doctor	1 50
Dadd's Modern Horse Doctor	1 50
Dana's, Samuel H., Muck Manual	1 25
Darwin's Variations of Animals and Plants (2 vols)	6 00
DeVoe's Market Assistant	2 50
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Downing's Rural Essays	5 00
Downing's Ladies' Companion to the Garden	2 00
Du Breuil's Vineyard Culture (Dr. Warden)	2 00
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Farm Talk (Brackett)	1 00
Farming for Boys	1 50
Field's, Thomas W., Pear Culture	1 25
Five Acres to Much, (illustrated)	1 50
Flagg's European Vineyards	1 50
Flax Culture	50
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Flint's Milch Cows	2 50
Flower Gardens for Country Homes	25
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Frank Forester's Fish and Fishing, 8 vo. 100 engravings	3 50
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Fuller's Small Fruit Culture	1 50
Fuller's Strawberry Culturist	25
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Gray's Manual, Botany and Lessons, in one vol	4 00
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Green on Trout Culture	1 00
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Hoopes on Evergreens	3 00
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Address, CHAS. H. MAROT,

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The Gardener's Monthly,

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Horticulture, Arboriculture, Botany and Rural Affairs.

EDITED BY THOMAS MEEHAN.

Old Series, Vol. XVI. *MARCH, 1874.* *New Series, Vol. VII. No. 3.*

HINTS FOR MARCH.

FLOWER GARDEN AND PLEASURE GROUND.

We need scarcely remind our readers how much the internecine war discouraged horticulture. There was, towards the end of the strife, considerable inquiry for fruit trees, and for those common kinds of trees and flowers which not even the most indifferent to floral taste could do without. But the finer branches of the art were almost destroyed. Landscape gardening was little thought of; and the passion for rare trees and plants nearly died out. Most nurserymen let this class of stock run down; a few kept alive their interest; and some of our best amateurs who were not much affected by the vicissitudes of the times, drew from European nurseries the rare things which the necessity of the case had led our own nurserymen in a great measure to drop.

It is a pleasure to note here that the good old times are returning. The people are becoming more interested in tasteful gardens; and those who are preparing to enjoy them, not only take an interest in the correct principles of landscape gardening, but first-class landscape gardeners are in fair request. Those nurserymen who deal in the rare trees and shrubs, tell us that the inquiry for them has increased wonderfully the past year or so; while the flower seed men are mostly doing an excellent trade. Even fruit growers' meetings and farmers' clubs have taken to discussing æsthetical gardening; and all accounts agree that where these subjects are introduced, they prove exciting and interesting.

These facts are very encouraging to a magazine like ours. We have, in a great measure, had to bow to the temper of the times. Only a few, thought we, take an interest in the higher branches of gardening,—take care to say little except it be about pears or potatoes; or, once in a while perhaps, tell how the roses grow.

We feel that we have gone beyond this now. We may tell the whole truth without offending any one. The songs of birds, and the gay opening blossoms, the fragrance of the flowers, and the elegance of trees and shrubs, and soft carpeted lawns, were as much made for human enjoyment, as the ear of corn or the flesh of animals. Our readers believe this, and we intend to confirm this faith as we have opportunity.

Among the matters which make a garden look cultivated, and as little like wild nature as may be, weeping trees may be classed. There have been great additions to these since the time whereof we spoke. The old weeping beech is one of the most beautiful of this class. The leaves have such a rich look, and of such a deep shining green, that it strikes every one. And it is a real weeper. There is nothing more effective in an artificial garden. In Mr. Hunnewell's Italian ground, the weeping beech on the high terrace is more effective than all the specimens of the topiary art about it. Of late there are two new weeping beeches spoken of, but are probably not yet in America. One is a dwarfish kind with slender twiggy branches, the other is said to be a blood-leaved weeper. This last will be charming. The weeping Larch is seldom seen; as in the first place it is rather difficult to grow, and in the next place it often grows one-sided, or takes on some ungainly form. But of

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FLOWER GARDEN AND PLEASURE GROUND.

We need scarcely remind our readers how much the internecine war discouraged horticulture. There was, towards the end of the strife, considerable inquiry for fruit trees, and for those common kinds of trees and flowers which not even the most indifferent to floral taste could do without. But the finer branches of the art were almost destroyed. Landscape gardening was little thought of; and the passion for rare trees and plants nearly died out. Most nurserymen let this class of stock run down; a few kept alive their interest; and some of our best amateurs who were not much affected by the vicissitudes of the times, drew from European nurseries the rare things which the necessity of the case had led our own nurserymen in a great measure to drop.

It is a pleasure to note here that the good old times are returning. The people are becoming more interested in tasteful gardens; and those who are preparing to enjoy them, not only take an interest in the correct principles of landscape gardening, but first-class landscape gardeners are in fair request. Those nurserymen who deal in the rare trees and shrubs, tell us that the inquiry for them has increased wonderfully the past year or so; while the flower seed men are mostly doing an excellent trade. Even fruit growers' meetings and farmers' clubs have taken to discussing æsthetical gardening; and all accounts agree that where these subjects are introduced, they prove exciting and interesting.

These facts are very encouraging to a magazine like ours. We have, in a great measure, had to bow to the temper of the times. Only a few, thought we, take an interest in the higher branches of gardening,—take care to say little except it be about pears or potatoes; or, once in a while perhaps, tell how the roses grow.

We feel that we have gone beyond this now. We may tell the whole truth without offending any one. The songs of birds, and the gay opening blossoms, the fragrance of the flowers, and the elegance of trees and shrubs, and soft carpeted lawns, were as much made for human enjoyment, as the ear of corn or the flesh of animals. Our readers believe this, and we intend to confirm this faith as we have opportunity.

Among the matters which make a garden look cultivated, and as little like wild nature as may be, weeping trees may be classed. There have been great additions to these since the time whereof we spoke. The old weeping beech is one of the most beautiful of this class. The leaves have such a rich look, and of such a deep shining green, that it strikes every one. And it is a real weeper. There is nothing more effective in an artificial garden. In Mr. Hunnewell's Italian ground, the weeping beech on the high terrace is more effective than all the specimens of the topiary art about it. Of late there are two new weeping beeches spoken of, but are probably not yet in America. One is a dwarfish kind with slender twiggy branches, the other is said to be a blood-leaved weeper. This last will be charming. The weeping Larch is seldom seen; as in the first place it is rather difficult to grow, and in the next place it often grows one-sided, or takes on some ungainly form. But of

INTENTIONAL SECOND EXPOSURE

late people take the common European larch, train it up to eight or ten feet, and then cut its head off, and at the same time trim up the side branches to a single course at the top. Seldom starts out a new leader, and the vigor of the whole tree being thrown into the single set of side branches, they drop grandly. In weeping ashes we have still but the old green leaved and the golden barked; the last is rather more tender than the other, but when it gets to grow well, is a striking object on the lawn. In weeping poplars there are two forms,—one of the English aspen with rather small leaves, though larger than the American aspen—the other of the large tooth-leaved American poplar, Populus grandidentata. In willows the Kilmarnock and the Fountain are still the best. The former is a delicate grower, and is an excellent thing for small corners, or limited spaces on lawns. The weeping mountain ash is very easily propagated by budding, and would be immensely popular only for its suffering so from a hot summer, or borers near the ground at any time. Notwithstanding the many sold, we have never seen a specimen of any size. Along the cooler climate of the lake country we have been told it does charmingly. The weeping hawthorn suffers in the same way from similar causes. Weeping elms are always beautiful. They suffer much by having the leaves skeletonized in July by the leaf-slug, but the American forms are more free from this evil than the European ones. As a general rule American trees have not given us many weepers as yet. So far as we know, there is not a single maple of a dicided weeping habit; nor a weeping oak, among so many species. It is worth watching for among our wild trees. There are some few other weeping trees less known, which from time to time we shall introduce to our readers' attention.

The sowing of seeds of annuals is one of the leading occupations of this time of the year. Much of the ill luck with them comes from rotting in the ground. A rain comes after sowing, and if the seed has partly swelled, it easily rots by being a few hours under water. To avoid this, sow on the surface, and close the earth over with a trowel. It is even a benefit to make a little mound of a half-inch or so, before sowing. Then it will make no difference if the rain continues for a week, the seeds will always be *above the level*, and never get saturated. Another little thing, often neglected by seed sowers, is to mark the place where the seeds are sown. A little stick set in will always be found useful, as all who have not done so will readily understand. In olden times this was always attended to, and a little slit made in it, in which the name on the paper was neatly folded and set. Of course a neat label looks prettier, but somehow those people of the elden times, who followed these primitive ways of naming their plants, knew more about them than many of the moderns. Only the hardy annuals must be sown in March; those which are tender must be reserved until the soil and weather is settled warm. We need not give a list of these, as every seedsman has now these particulars on every package he sends out.

If flowers have been growing in the ground for many years, new soil does wonders. Rich manure makes plants grow, but they do not always flower well with vigorous growth. If new soil cannot be had, a wheelbarrow of manure to about every fifty square feet will be enough. If the garden earth looks grey or yellow, rotten leaves—quite rotten leaves—will improve it. If heavy, add sand. If very sandy, add salt—about half a pint to fifty square feet. If very black or rich from previous year's manurings, use a little lime, about a pint slacked to fifty square feet.

Prune shrubs, roses and vines. Those which flower from young wood, cut in severely to make new growth vigorous. Tea, China, Bourbon and Noisette roses are of this class. What are called annual flowering Roses, as Prairie Queen and so on, requires lots of last year's wood to make a good show of flowers. Hence, with these, thin out weak wood, and leave all the stronger.

The attention which has been given of late years to hardy herbaceous plants, is encouraging the introduction of new kinds. There have been some grand additions to the Columbines. We have the white and purple of the north of Europe, the beautiful Aquilegia cœrulea, with large blue and white flowers; the rich crimson A. canadensis of the Eastern States, and now the yellow long spurred A. chrysantha of southern Utah and Arizona. When these come to be hybridized and mixed up, it will make a charming and popular race of American garden plants.

In the adornment of gardens and grounds much use is now made of the dwarf forms of evergreens. Since the introduction of so many golden forms, all of which have proved more hardy than the silver tints, they are grown in masses, and make excellent features. The common evergreen ivy, with its numerous varieties, are grown in masses for bordering. When growing up against the walls of our houses, they are often injured or destroyed in the winter; but when trained, or left to trail on the ground, dry leaves, with some brush on to keep them from blowing away, make an efficient protection. The new Euonymus radicans variegata, is an excellent thing to match with ivy grown in this way.

Every one likes to have hollies and magnolias, but they have the reputation of being hard to transplant. But if cut in severely when moved they always do well, and are amongst the most successful of transplanted trees. This little hint about pruning at transplanting may be applied to most things. There are very few kinds of trees that are not benefitted by the practice, though often trees will get through very well without it.

It is sufficient to dig garden soil only when the garden is warm and dry. Do not be in a hurry, or you may get behind. When a clot of earth will crush to powder when you tread on it, it is time to dig—not before.

If perennial plants have stood three years in one place, separate the stools, replacing one-third, and give the balance to your neighbor who has none.

FRUIT GARDEN.

In practical hints suited to the season, it is very hard to say much that is new, or that has not been often gone over before. The greatest gain of the few past years has been in divesting fruit culture of much of that mystery with which it was formerly surrounded. Almost any soil will grow fruit trees tolerably well, and a very little common sense and observation will teach people how to manage them in a tolerable sort of a way. Of course, if the very highest excellence is desired, then extra care in the selection of spots, and extra expense and skill, are necessary. But the trouble has chiefly been that new beginners have been taught by writers who were aiming at the highest excellence, which after all can only be reached by experience; and starting at this wrong end, so many people fail. The fact is very few men who recommend spending from two to five hundred dollars an acre in getting ready a fruit orchard, ever do it themselves. We read of keeping the surface clear of all vegetation, and give the land *wholly* to trees, but we have never met the writer who practiced what he wrote.

VEGETABLE GARDEN.

This is a busy season south of Pennsylvania in this department; here we must wait till the end of the month, and northward still later. The crops noted will, of course, be dependent on the arrival of the *season*, which is rather indicated by the ground becoming warm and dry, than by the almanac. It is very important to have crops early; as soon as the ground is, therefore, in good condition put in the seed. Possibly a cold rain might come and injure them, and you may lose, and have to make a new sowing. Even so, it is but the loss of the seed and labor, while, if the seed do *not* die the early crop will more than repay that risk.

It is best not to sow tender vegetables too, soon; they get checked, and the last will be first. Asparagus is one of the earliest crops to set out. It was at one time believed that the varieties of this would not come true from seed, and that there was but one best kind. We are not so sure of this now. Many plant them too deep and fail; four inches is enough, rows 20 inches, and plants one foot apart will do. Make the soil particularly rich.

Where new Asparagus beds are to be made, now is the time; the ground should be rather moist than dry, and be trenched about two feet deep, mixing in with it a good quantity of stable dung, and, if the ground be inclining to sand, add some salt; the beds should be marked out four feet wide, and the alleys about two feet. If pegs are driven down at the corners of the beds permanently, they will assist operations in future years. Having marked the positions of the beds and procured a stock of two year old plants, place them on the soil nine inches apart in rows, one foot asunder, making three rows in each bed; then cover the whole with soil from the alleys and rich compost a couple of inches.

To have Turnips good in spring they must be sown very early; they are hardy, and must be put in as soon as the ground can be caught right.

Salsify, too, must be in as soon as possible,—it prefers a strong, rich loam.

Those who have no Spinach sown in the fall, should do that right away; no amount of stable manure but will be a benefit to it, though guano, in even small doses, will kill it; guano produces excellent Cabbage, mixed with the ground while it is being dug for that crop. Cabbage, by the way, may be put in as soon as

the ground is ready; and Potatoes are better in before the beginning of next month, if the ground is not too wet; many plant Cabbage between the Potato rows.

Deep, rich soil, now so generally condemned for fruit gardens, is of the first importance here. Soil cannot be too rich or too deep, if we would have good vegetables. It is, indeed, remarkable, that in many respects we have to go very differently to work to get good fruits than we have to perfect vegetables. While, for instance, we have to get sunlight to give the best richness to our fruits, our vegetables are usually best when blanched or kept from the light. So, also, as we keep the root as near the surface as we can in order to favor the woody tissue in trees, we like to let them go deep in vegetables, because this favors succulence.

To have Broccoli it has to be sown very early, or it will not head. The purple Cape and white Walcheren are the most popular varieties. In Cabbages there have been many new varieties the few past years. It is hard to decide on the best. The Early Dwarf York is still largely planted for the first crop, and the large Early York planted for the second coming in. The Early Wakefield is, however, very popular in some districts. The Winningstadt is approved as a summer sort, and its tender quality is appreciated. For late crops the Marblehead varieties have justly earned a good reputation, although the Large Late Drumhead, and Flat Dutch are still largely planted. The Savoys and Red Dutch are also sown now. For protection against the Cabbage-fly we find nothing so good as water slightly impregnated with coal oil, and syringed over the seed beds.

Celery for the main crop will do about the end of the month, but a little may be sown now. We have never been able to make up our mind whether there is such a thing as an absolute *solid* variety of Celery; and whether pithiness in any degree depends on soil or culture. Certainly we buy all the most improved "solids" every year, and never yet found one satisfactory throughout. We cannot say which is the best of the many candidates.

In the hotbed, pepper, egg-plant, tomato and cucumbers may be sown,—and in a cooler hotbed frame, Early York cabbage, cauliflowers and celery. Those who have not got a hotbed, can sow a few pots or boxes, and keep them near the light in a warm room.

In addition to sowing of the above, onions, leeks, parsnips and parsely must be sown at this season—not for the main crop, but to have a few in advance of the rest. To keep over the winter, almost all kinds of root crops become tough or coarse if soon too soon.

In the open ground, peas and potatoes receive the first attention. Then beets and carrots. Then lettuce, radish, spinach, onions, leeks and parsley. Beyond this, unless in more favored latitudes than Pennsylvania, little can be done until the first week in April. There is nothing gained in working soil until it has become warm and dry.

COMMUNICATIONS.

WHAT NEW ROSES ARE THE BEST FOR GENERAL CULTIVATION.

BY CHARLES H. MILLER, MOUNT AIRY NURSERIES, GERMANTOWN, PHILA.

(Read before Fruit Growers' Society of Pennsylvania.)

I feel myself compelled to acknowledge that I am unable to say anything about roses that has not been said before, and which has not been said over and over again in every possible form and variety of language. I could talk very prettily about such a favorite theme, quote some excellent poetry, and discourse most excellent music on this subject, but it would turn out to be merely an old tune after all.

It is but a few weeks since I attempted to fulfil the wishes of some horticultural friends in this respect, and will not deny that I did succeed in getting off some very pretty ideas on the subject. In fact I was so taken with them that I longed to see them in print. I read them over several times; and by the time I had done so, I became painfully aware that what I considered was something fine, were really ideas not my own, and that I had been unconsciously purloining the ideas of innumerable writers of all ages on this favorite theme. For in all languages of civilized nations, volumes have been written on the history, the poetical and legendary associations, of the classifications, and the culture of the rose, so that whoever wishes to be thoroughly informed on any particular branch of the knowledge pertaining to rose culture, will look to the production of such works that treat fully on the subject; and information in regard to new varieties can be obtained from the catalogues of the nurserymen who make a specialty of their culture.

If I cannot give you any new ideas in regard to their culture, pruning and after-management, I hope to make amends for my short comings in that respect, by naming a few good roses of the highest possible merit, known only to the few, and when better known, will be duly appreciated and extensively cultivated. Most of them have been introduced and naturalized sufficiently to enable them to be spoken of with something like confidence, as to their various habits, their merits, as to hardiness, their distinctness of color, and their decided improvement in form. The flowers are more double and perfect, the shades of crimson deeper, and more vivid: white is blended with orange; and the habits of the plants much more elegant in general appearance.

The following are among the best, if not the very best, in cultivation:

Importations of 1871.

H. P.

Comtesse d'Oxford—bright red.
Henri Pages—bright rose.
La Motte Sanguine—carmine.
Louis Van Houtte—scarlet, changing to crimson.
Louisa Wood—bright rose.
Mad. La Baronne de Rothschild—pale rose.
Coquette d'alps—pure white.
Marquise de Castellane—bright rose.
Paul Neron—dark rose, very large flower.
Pitord—velvety-red.
Princess Christian—rosy-peach.
Virgil—clear pink.
Madamoiselle Juliette Halphen—flesh color.
Mons. Woolfield—bright rose.
Thyra Hammerick—delicate rose.
Edward Morren—cherry-rose.
Boule de Neige—pure white.

TEAS.

Belle Macoinnaise—canary-yellow.
Coquette de Lyon—light yellow.

Hortensia—rose color.
Mad. Azalia Imbert—salmon-yellow.
Mad. Berrard—salmon-rose.
Mad. Celina Noirey—rose, very large.
Mad. Ducher—clear yellow.
Marie Sisley—yellow and rose.
Monplaisir—salmon-yellow.
Victor Pulliat—white, tinged with yellow.
Reine du Portugal—bright yellow.
Mad. Trifle—salmon-yellow.
Mad. Margotten—citron-yellow.

NOISETTE.

Reine D'or—coppery-yellow.

BOURBON.

Amelia de la Chapelle—flesh color.

Importations of 1872 *and* 1873 *promising well.*

H. P.

Felician David—deep red.
John Laing—velvety-crimson.
MacMahon—deep rose.
Claude Levet—reddish-purple.
Mad. Lacharme—white, shaded rose.
Perle des Blanches—pure white.
Abbe Bramarel—reddish-crimson.
Andre Dunant—pink.
Baron de Bonstetten—deep crimson.
Baron Louis Uxkull—carmine rose.
Coquette des Blanches—pure white.
Etienne Levet—carmine.
Jeanne Guillot—rosy-lilac.
Le Havre—bright vermillion.
Pierre Izambart—deep rose,
Richd. Wallace—bright rose.
Vicomtesse Douglass—glossy-red.
Victor Verne—currant-red.

TEAS.

Mad. Jules Margotten—pink, tinged with yellow.
Perfection de Monplaisir—canary-yellow.
Souv. de Paul Neron—salmon-yellow.
Le Nankin—coppery-yellow.
Ma Capucine—golden-yellow.
Henry Lecoq—rose color.
Comtesse de Nadaillac—flesh color, yellow centre.
Annette Seant—orange-yellow.
Blanqui—pure white.
Catherine Mermet—flesh color.
La Jonquille—deep yellow.
Jeanne d'arc—clear yellow.
Marie Van Houtte—yellow, tinged with rose.
Louis Gigot—rose color and white.

And permit me to say to all who love this royal flower, that if there be one among the list

which does not already adorn your garden, I earnestly advise you to repair the omission forthwith. Do this, and I promise that you will have secured what many a precious lifetime has been wasted in the seeking, a new pleasure.

List of choice old varieties.

HYBRID PERPETUALS.

Alfred Colomb—clear red.
Baron Hausmann—bright red.
Baronne de Maynard—white.
Baronne Prevost—bright rose.
Beauty of Waltham—cherry-red.
Boule de Neige—white.
Chas. Verdier—rose.
Chas. Wood—dark rose.
Duchess of Sutherland—pale rose.
Dr. Andre—red.
Felix Genero—violet.
Genl. Jaquiminot—fiery red.
Genl. Washington—rosy-red.
Jno. Hopper—light rose.
Jean Rosenkrantz—coral-red.
Jules Margotten—cherry-red
La Brilliant—carmine-red.
La France—pale peach.
La Reine—lilac-pink.
Lady Emily Peel—white.
Mad. Alice Durean—rose.
" Chas. Wood—scarlet.
" Chirard—rose.
" Victor Verdier—bright cherry.
Marie Baumann—carmine.
Mons. Boncenne—dark crimson.
Pierre Notting—blackish-red.
Velours Pourpre—dark velvety-crimson.
Victor Verdier—carmine.
Xavier Olibo—velvety blackish-crimson.

BOURBON.

Hermosa—rose.
Geo. Peabody—crimson.
Goire de Rosamond—carmine.
Jules Cæsar—cerise.
Mad. Gustave Bonnet—white.
Souv. de la Malmaison—flesh color.
Lady Canning—rose.

MOSSES.

James Veitch—dark violet.
Mad. William Paul—rose.
Mad. Eduoard Ory—deep rose.
Wm. Lobb—violet.
Perpetual White—white.

CHINA.

Mrs. Bosanquet—pale flesh.
Archduke Charles—rose.
Ducher—pure white.
Cels Multiflora—flesh.
Agrippina and Louis Phillip—crimson.

NOISETTES.

Amy Vibert—white
Fellemburg—crimson.
Ophire—buff.
Lamarque—white.
Solfatarre—yellow.

TEAS.

Adreinne Christophe—yellow pink centre.
Belle Lyonnaise—canary.
Bon Seline—deep rose.
Comtesse de la Bath—salmon.
Devoniensis—flesh yellow.
Gloire de Dijon—yellow.
Homer—rosy-salmon.
Hypolite—white
Jean Pernet—bright yellow.
Isabella Sprunt—yellow.
Lais—fine yellow.
Mad. Russell—blush.
Mad. de Vatry—rose
Safrano—copper-yellow.
Souvenir d'un Amie—rose.
Triumph de Luxemburg—salmon.

In the foregoing list of roses suitable for general cultivation, the Hybrid perpetuals are the general favorites, and deservedly so, for of all the hardy kinds they are the most desirable. They thrive under common treatment, and are generally suited for all soils and situations. For the embellishment of the flower garden and shrubbery, they are indispensable, and can be relied on for all the various purposes to which roses are applied in garden and lawn decoration.

This division embraces classes of roses that differ widely in many respects. Some bloom but twice, others are almost constantly in flower till frost sets in. Some are quite hardy, others scarcely so, and requires some little protection during very severe weather.

The China and Tea scented roses are the original perpetuals, and all others that are called hybrids perpetuals, have been created by hybridizing with one or other of the numerous species of summer roses, and breeding in and in with these crosses to produce all the varieties now cultivated.

All are hybrid perpetuals but those which show strong resemblance to the species with which they are crossed. They are separated into classes by the principal rose growers, to conform

to usage and for convenience of classification. Thus we have Hybrid Chinas, Hybrid Bourbons, Hybrid Mosses, and Hybrid perpetuals or remontants.

Our climate is quite as favorable to the improvement or to the production of good roses as that of England or France, from whence most of our best varieties are obtained; and when horticultural art has reached among us the same degree of development, our private and commercial gardens will, I trust, produce results equally splendid.

In England roses are grown by all classes to the highest possible perfection. The competition for prizes, far from being a mere strife for premiums, is an honorable emulation in which the credit of success is the winner's best and most coveted reward.

Roses, like other things in the vegetable kingdom, are also beautified and enlarged by a judicious and generous course of treatment. It cannot be too often urged in connection with their culture, that to succeed is to be successful. He who raises one perfect specimen of a plant is a better cultivator than he who raises an acre of indifferent specimens; and whoever has made himself a thorough master of the art of cultivation of a single specimen, or variety, has acquired a knowledge and skill which enables him to succeed with the many.

One of the conditions essential towards success in rose culture is the preparation of the soil. Good loamy soil requires very little preparation beyond the usual trenching and manuring. It must be understood, however, that if the soil is wet, draining will be necessary, for it is useless and wasteful to put manure on wet soil. In all such cases then, the first effort must be to drain the soil. Thorough draining airs the ground to whatever depth it drains off the water; therefore it is best to drain deep. Water occupies a large portion of the texture of what we call solid earth. When we draw the water from the soil by drains, the space thus occupied by the water in the earth is supplied by air. The air transmits heat and cold less rapidly than water. Deep drainage, therefore, tends to equalize the temperature of the soil, and to neutralize the effect of great and sudden changes in the temperature of the earth's surface. It is impossible to underdrain a wet subsoil too thoroughly, as the earth has the power to draw up from below all the moisture that is needed to sustain vegetable life; and in addition it also has the power to absorb a vast quantity of moisture from the air in its passage through the soil.

Next in importance to drainage, therefore, is deep trenching. It supplements drainage by often and repeated exposure of a certain depth of soil to the action of the sun and air, by which its oxygenation is carried on more rapidly than it otherwise would be when not so exposed.

The worst of all soils for roses are those of a light dry sandy or gravelly nature. In such soils roses often suffer from the dry weather in the hot summer months, and are liable to the attacks of the red spider, one of the worst enemies the rose has to contend against, and which is not easily kept under subjection in hot dry seasons.

Poor soils of this kind or that of old worn out gardens are sometimes beyond remedy. In such cases the best plan is to remove the soil at once, and replace it with good turfy loam from an old pasture or corn-field. Soil that will grow good corn will grow good roses. If rather stiff the better. In fact strong loam and plenty of well rotted manure, are really all that are necessary for the cultivation of roses.

The hardy kinds of roses are not so particular as regards locality, providing they have an open airy situation, and far enough from trees of all description that the roots of the latter cannot reach the soil of the rose beds, for it must be understood that roses want all the nourishment the soil can give them, and that they are not willing to share with others that which they require for their own sustenance.

Planting:—Under this head, I will take occasion to say, that the planting of roses as isolated specimens on a lawn, is in my opinion almost always a mistake, in fact an error in good taste. There are few, if any, that ever form under such treatment, an object sufficiently well foliaged to be pleasing, or even an object of interest when not in bloom.

In the suburbs of all our cities we see a certain number of gardens and lawns made hideous with starving rose bushes that have neither shape nor make at any time; that are leafless and scraggy half the year, and during the other half show a few unhealthy leaves, with an occasional flower that are scarcely equal in form and beauty to those imitation roses that are sometimes cut out of a turnip or red radish, and used for the adornment of the Christmas tree.

Then the first step towards securing a nice show of roses is to select the most sunny and

airy spot the garden affords; and generally the most favorable spot is somewhere on the lawn. It should, however, be borne in mind that the location thus selected should not be the most conspicuous spot as seen from the principal windows of the dwelling, where their appearance in winter from their being leafless, and the necessary covering and protection, would be decidedly objectionable; but where in summer, when all is bright and lovely, a walk to the rose-beds would afford a pleasant recreation before breakfast. And here let me say that, if you would see roses in all their freshness and beauty, you should see their half expanded buds with the glistening dew on their surface. A pleasure felt, but not easily described.

The location selected next in order is the form of the beds and their arrangement. Allusion has previously been made to the bad taste of planting roses singly on grass. A decidedly better and more proper way is to plant them snugly in beds, large or small, as suits the means and taste of the grower. For a small collection, one good size bed, circular in form, with the four sides scolloped towards the centre, is the most convenient shape. By this arrangement the cultivator has all the plants within reach without having to step on the bed. The cultivator should also make himself acquainted with the different habits of the various varieties he intends planting. This can be learned by consulting the catalogues of the commercial growers. Those marked vigorous should be planted in the centre, distributing the smaller sorts around the larger, thus forming a compact and regular outline, at once symmetrical and beautiful. For large collections a number of beds would be needed, and a variety of forms could be used. Each form should comprise a complete part of a general plan, each part being complete in itself, a perfect whole would be the result.

In garden decoration the climbing and pillar roses are very useful; neatly trained to posts for the centre of the rose bed, and distributed throughout a well cultivated shrubbery they are very ornamental, and when blooming above and among the dark green foliage of well arranged masses of shrubs, they are seen to advantage.

PRUNING.—The following few remarks under this title contains all that is necessary to be said on the subject. Long treatises have been written on it, describing in detail different modes pplicable to different classes of roses, and confusing the rose grower by unnecessary and perplexing particulars.

One principle will cover most of the ground. Strong and robust growing kinds require little pruning. On the other hand, weakly growing roses should be pruned severely.

In shortening the shoots of the majority of hybrid perpetuals, four or five eyes should be left; but those of robust and luxuriant growth, such as Madame La Baronne de Rothschild and others of like nature, should be only shortened to about half their length. With the more vigorous summer-blooming varieties, cut off about one-third of their entire length only. Keep the centre of the plant well thinned, and prune moderate, anything like short pruning with such subjects being productive of abundant rank wood and scanty blossom.

In the short growing hybrid perpetuals and bourbons, two or three eyes or buds are sufficient to be left. In the more tender tea scented and chinas, all weak and useless should be removed; and the operation must be done with care. And as in many varieties the eyes or buds are far apart, the knife must be sparingly used, or failure may be the result. Much, however, depends on the object or the aim of the cultivator. If a profusion of bloom is required, or a constant supply of buds is necessary, without regard to the size or the perfection of the flowers, then very little pruning is required other than merely thinning out all weak and superfluous shoots, and shortening the ends of the main branches.

Climbing roses, such as Noisettes, Boursaults and the Prairies, and some of the vigorous summer roses, are the strongest growers, and require little pruning; first, because of their vigorous growth, and secondly, because profusion of bloom rather than quality is required. The old and dry wood should be wholly cut away leaving the strong and young shoots of one and two years growth to take its place, with no other pruning than the shortening of the ends of all side or lateral branches, and the thinning out of all useless shoots. In all cases it is the well ripened, plump looking wood that bears the best flowers. Old enfeebled and soft unripe wood should, in all cases, be removed.

Half pruning in the autumn is very important to lessen the weight that has to stand against the wind, and to prevent undue exhaustion from severe cold, dry weather. The final pruning may be done in March or the early part of April.

The exact time depends very much on the season being late or early.

The object of pruning is three-fold; first, to give the plant shape and proportion; secondly, to improve the size and beauty of the flowers; thirdly, to invigorate the plant. The first object is a very important one, as the future shape and health of the plant depend on the first training it receives. No two shoots should be allowed to crowd each other: a mass of thick foliage is both injurious and unsightly. Sun and air should have free access to every part of the plant.

Pruning in summer, when the plant is in active growth, has the contrary effect to that of pruning in winter, when the plant is in a dormant state, the process is weakening rather than invigorating. It deprives the plant of a portion of its leaves just at the time when they are most needed, and cannot in all cases be recommended. It is, however, often desirable, and frequently saves much trouble, and may be effected to a great extent by cutting the blossoms with long stems when wanted for decoration or otherwise, and by removing all decaying and faded flower-stalks. Many of the kinds by this treatment, and by reducing their main branches to one-half their length in June, are much more certain to give autumnal blossoms, besides the general appearance of the plants will be much improved.

To produce the best effect with roses, continuous blooms should only be used; such as Hybrid perpetuals, Teas, Bourbons and Chinas. Summer roses that bloom once in a season and no more are useless except for exhibition purposes. If you desire to have summer roses—and none are more beautiful when in bloom—let them have a place by themselves. Never let them mar the effect of the others, by planting among them sparse blooming kinds, when by a judicious selection of monthly blooms a complete succession can be had of beautiful buds and blossoms, and the rose garden kept in perpetual and ever increasing beauty.

TRANSPLANTING.—As roses flourish better for an occasional transplanting, and their bloom and foliage is always finer in cultivated than in grassy ground, a biennial lifting of the plant should form a part of their culture. The process will enable the cultivator to perform the operation of root pruning, often a very important matter with the strong growing kinds. And all who desire their roses to bloom satisfactorily in the autumn, should embrace the opportunity thus offered, to enrich the soil by deep trenching and by well rotted manure.

Now the best time to transplant or lift and replant roses is when the roses are ready; and they are ready just before their leaves drop in the fall: say about the last week in October, or the early part of November. If proof of this is required, one has only to take up a few roses, two weeks after planting in November, when it will be at once seen that a large quantity of delicate white fibres present themselves. These roots are formed by bottom heat, or to put it in plain words, by what ground heat remains of the past hot summer weather, which is sufficient to establish the roots before winter sets in. From November the heat diminishes, and vegetation becomes less active. Therefore, it is easily seen that if the operation is deferred until late in November, the roots will remain stationary with every probability of their being injured by the winter, for it must be borne in mind that no amount of sun during the winter will have other than bad effect on roses planted after the time here specified. They may, and probably would survive the winter, and the buds start in spring; but as there will be a deficiency of fibrous roots, the plants will suffer accordingly. Therefore plant early in November, unless the plants have been grown in the greenhouse, in pots all summer; in that case better defer the planting until spring. Plants grown in pots, although smaller, are generally more desirable than those grown and taken from the open ground.

Before leaving the subject, it will be desirable to point again to the fact, that to have roses in anything like perfection, they require liberal cultivation. They must have a compost of a substantial character; and in practice nothing has been found better than good rich loam rather close in texture, and well-rotted barn-yard manure.

Those who wish to have roses constantly in bloom must be liberal and feed them well. Supplying the plants liberally with water during the growing season is a matter of great importance. Indeed if they suffer from drought, many of the leaves will fall off, and the remaining portion will, in all probability, be infested with red spider,—the plants will become sickly, and present a very undesirable appearance. The proper course is to flood them plentifully in dry weather. They should have manure-water several times during the season, thoroughly saturating the soil, which should be previously loosened with a

fork. Attention should likewise be paid when cutting the flowers to cut back to a promising eye, one that indicates by its plump form a future bloom-bud. Improper management or neglect will speedily reduce a free flowering kind to a sparse blooming one, and liberal culture and careful attention will have the contrary effect.

I now find myself somewhat in a like position to a certain gentleman who broke down in his speech at a public meeting. Another gentleman rose, and apologizing, said that his friend had suddenly lost his train of thought. And now I have lost mine, but I hope may be enabled again to find it at our next annual meeting in 1875.

BUDS FOR PEACH TREES.

BY J. J. BLACKWELL, TITUSVILLE, N. J.

In selecting buds for propagating the peach, I would not give much preference to single, double, or triple buds, believing that the single buds start the soonest in the spring, the double buds the surest. And in budding from yearly trees there is not much but single buds, unless we use very large buds. I prefer to have bud sticks just a little smaller than the stocks, without regard to whether the buds be single or otherwise.

In propagating from bearing trees, I find it best to use triplicate buds, as then there is always wood, as well as fruit buds. For a budder that can tell fruit and wood-buds apart, it will make no practical difference so far as my observations extend.

OUR NATIONAL ADVANCEMENT.

BY CHRONICLER.

We are in receipt of numerous catalogues of seedsmen, nurserymen and florists, for this year (1874), containing lists of the choicest species and varieties of culinary vegetables and fruits that can be produced in our many climates of two thousand miles of latitudes, and three thousand miles of longitudes. Hardy and tender exotic flowers, ornamental trees and shrubs, all the most useful grasses, esculent roots, &c., with *many new* varieties of all the different classes. We have known our commercial gardeners for the past third of a century introducing superior varieties in all the various departments, and discarding the less valuable; so every year we get improved selections.

The catalogues are very instructing and interesting, with concise descriptions and beautiful illustrations of the diversified stocks. All who have farms and gardens should get some catalogues; the most of them are got for the price of mailing—(we refer the readers to the advertising pages of the *Monthly*.) The contents of those catalogues are convincing proofs of the advancing progress of our husbandry in general.

Our home manufacturers are also increasing and improving their various fabrics. The rapid development of our useful and precious minerals, and their manufacture into the many articles for which they are suited. And coupled with all these, see our rapid transit of news, men and materials; by our mail, telegraph and railroad, and steam navigation, canals, &c. So our commercial progress keeps pace with all our requirements. Our well-conducted magazines and newspapers keep us enlightened in everything pertaining to our interests. Our system of general education, and the highest branches of collegiate learning, make our people the most intelligent as a whole. Our every want for advancement is supplied by our inexhaustible resources and determined energy. Our "Centennial Exhibition," to be held in two years and six months from this writing, will show our century's progress under Republican Government. We are a great nation now, and if *mutual friendship* and *Christian love* continue among our people, in another century, America will be almost omnipotent among the nations of the world.

EUROPEAN NOTES.

BY PROF. C. S. SARGENT, BROOKLINE, MASS.

December 19th, 1873.

I send you a few notes of what I have seen horticulturally since my arrival in England on Monday last. On landing, I was struck, by what must always strike every one arriving from America, at this season of the year—the greenness of the grass, which now is as green here as it is with us the middle of May. The next thing one notices is the great predominance of evergreen trees and shrubs over all other varieties of plants in the plantations of recent years. In every garden, park, square and little front yard, there are nothing but Yews, Hollies, (green and variegated) evergreen oaks, Rhododendrons, &c. To be sure, great quantities of golden Yews and Aucubas are introduced, and serve to enlighten these plantations. Of course all these evergreens are most interesting at this season of the year,

and make the country warm and bright. Although I should think that for the warm weather the effect would be anything but cool or agreeable.

I passed an hour in the Botanic Garden at Liverpool, but saw nothing there of particular interest beyond some fine Rhododendrons, Hollies, and what seemed to be very old Thorn trees. The plants under glass are very poor, and in bad condition. I was warmly received at the Botanic Garden here by Prof. Balfour and Mr. McNab,—thanks to a letter from Dr. Gray.

The garden—twenty-seven acres—is beautifully laid out, and in excellent condition both inside and out. Several palm-houses fern-houses greenhouses, stoves, pits, &c. The big Palm House is 72 feet high. A superb pair of *Arenga saccharifera* have already reached the top of the house. There are here also a pair of *Seaforthia elegans* about 40 feet high; a *Caryota urens* about 50 feet high; a very old and much branched pair of *Pandanus*, with at least *fifty* distinct heads of leaves; an *Araucaria excelsa* 50 feet high; an *Areca lutea* 30 feet high, and most beautiful; a very curious climbing palm, *Plectocomia elongata*, probably the same as the large one at Cambridge, which we had supposed to be a *Calamus*. This plant, after growing up for some 50 feet, has been *chained* down to the iron balcony, so that the stem makes a right angle with itself, and runs along all one side of the house. Were it growing upright, its height would be something like 120 feet. There are quantities of tree ferns through all the house from 12 to 20 feet high. The most beautiful of all, I think, is *Cyathia dealbata*. Among the young palms *Ceroxylon andicola* struck me as the handsomest. There is quite a collection of tender conifers under glass—all large and beautiful specimens. Among them *Dammara australis* and *D. orientalis*. *Dacrydium cupressinum*, the most beautiful weeping tree I have seen. *Dacrydium Franklini*, the *Araucaria*, and the like. There is also a very large and complete set of medicinal plants. The collections of Orchids and succulents are small and poor. The most interesting portion of the garden is to me the Pinetum, especially rich in Silver Firs. Here are the plants raised from seed sent home by Jeffrey of the "Oregon Expedition," and are the oldest in Europe. The *Abies* do not do well, although there is a good *A. Douglasii* some 50 feet high, and well furnished. Near by is *Picea nobilis* 50 eet high. At that size it is a loose, ugly, straggling tree, entirely unfit for any ornamental purpose, and not worth a hundredth part of the trouble we have taken to make it grow with us. The *P. lasiocarpa* of Jeffrey is also a loose, fast growing tree, entirely unlike what we have received from Waterer as *P. lasiocarpa*. This one has short and very rigid leaves, and has grown about twice as high as other *Piceas* planted near it at the same time. It is entirely unfit for ornamental purposes. Of all the *Piceas* of North America in a young state, say not over 20 feet high, *P. Lowii* is the most beautiful. I think the two trees at Wodenethe, near the walk beyond the pasture, which have always been called *P. amabilis* are this *P. Lowii*. The true *amabilis* of Jeffrey and of this garden is entirely different, being of a darker color, and with much shorter leaves. Mr. McNab is of the opinion—and I dare say that he is right—that *P. Lowii*, *P. robusta* and *P. magnifica*, are merely varieties of *P. nobilis*, in which case I suppose our *P. Parsonsiana* must come under the same head. The collection of Pines is enormous, many of them entirely new to me. *P. Balfouriana* very rare and curious; but of all the hardy Pines I have seen *P. Muricata* is the most beautiful, of a very dark green, and a wonderful compact form of growth. Of the *Cupressus*, *Thuja*, *Biota*, *Libocedrus*, *Thujopsis*, &c., there is a wonderful collection, all in fine order, and many of them large plants. The *Cupressus Lawsoniana* is beautiful here, and is planted in great quantities, as are all its numerous varieties. The *Retinosporas* are small, and few in number and variety; but there are all over the garden quantities of Deodars, and of both the *Sequoia*, both singly and in clumps; also a beautiful collection of Yews of some eighty or a hundred varieties; beautiful Hollies, and great quantities of *Rhododendrons*, Portugal Laurels, &c., all about, make the garden most interesting.

The Rock Garden is very extensive and well filled. I was surprised to see *Cordyline indivisa* doing perfectly well in the Rock Garden, where it has been for four years, as also has *Phormium tenax*. I could say much more of this beautiful garden, but space forbids. You can be sure, however, I have greatly enjoyed my two days there. Near it are the Nurseries of Peter Lawson, where I saw the oldest Cupressus Lawsoniana in Europe. The following plants I have wanted to get there for you, H. W. S., and myself:

Juniperus recurva,
" Japonica nana (distinct),
Cup. Law. aurea variegata,
" " argentea "
Pinus Austriaca variegata,
" Strobus nivea,
" McIntoshiana,
" Sylvestris aurea,
" Muricata,
" Cembra nana,
Picea Lowii.
Ilex. Fortunii,
" " variegata,
" Moon shine,
" Lawsoniana,

All different from anything we have at home. My opinion of *Pinus muricata* was more than confirmed here, as they have two splendid specimens. I go to-morrow to York, to see Backhouse, and then to Worcester and London. You shall hear of all my horticultural doings.

The city gardens, squares, &c., are all nicely laid out here, and kept in the most perfect order. I must say, however, I am beginning to be a little tired of nothing but Hollies, Yews, Rhododendrons, Aucubas, Portugal Laurels, &c., even although the plants are fine specimens, and well grown. Small plants of *Araucaria inbricata*, which seems to do remarkably well, are met with on every hand, and are getting tiresome. When I see what they do with their public gardens here, I *sigh* more than ever over the Boston garden.

Since I wrote you from Edinburg, I have passed a day with Backhouse, at York, another with Waterer, have been several times to Kew, have visited the Botanical Society's garden in the Regent's Park, and have been out to Veitch's nursery of hardy plants beyond Richmond. So you see, horticulturally, I have been pretty active, and have seen more than I have either the time or the ability to tell you of, still I will send you a few notes.

Backhouse's Rock Garden is simply wonderful. Entirely artificial, and made on a perfectly level piece of ground. Still so wonderfully managed, that you would suppose yourself in some mountain valley, with a mountain torrent running through into a cool, quiet pool at the bottom. But the water all comes from the city water works, and the rocks were all brought some *thirty* miles, and hoisted into place with a stone-lifter. No small job, as many of the stones weigh some three or four tons.

The Rock Garden covers some four acres, but is so intricate and cut up that one can easily lose himself in it. Mr. Backhouse himself saw to the placing of every stone, and planted every plant. Certainly he has wonderful taste, and great knowledge of alpine and rock plants, and seems to succeed perfectly even with the most difficult subjects. The old part of the garden is about eleven years old, and the new portion about two years, still it all looks alike, and as old as time, except that, of course, the evergreens that surround and top it are young plants, 15 or 21 feet high. He is ahead, too, of every one else in his success with the *Silvery Ferns*. Of them he has the finest collection in cultivation both in pots and planted out. Those planted out are in his under-ground rock garden, which is entirely sunk below the level of the ground and covered with a glass roof. This is a delightful little place, with a little brook running through it, and with the rocks completely covered with all the British, Tasmannia and Chili *Trichomanes*, *Hymenophyllums*, *Todias*, &c., all growing with the greatest luxuriance and beauty. In his collection of other ferns, and in his orchid collection, I was disappointed. Among his evergreens, of which there are forty or fifty acres, the handsomest tree was a plant of *Picea Parsonsiana*, about 18 feet high. There can be no doubt about the variety, as he had it direct from Parsons. Thus far this has been the hardiest of all the silver firs at Brookline; and as it turns out so handsome, I think you had better write to Parsons and find out how many of them he has left, as I think we had all better get some more, if he has any good plants.

I had a short time with Waterer, but found the *whole* day too short in which to see half his treasures. I walked for hours through Rhododendrons, all the way from 6 inches high up to 20 feet. He has millions and millions of plants. From fifteen to twenty thousand *Everestianums!* and such standards, 5, 10, 20 feet through! Hollies by the ten thousand; and such beauties, and in every shape and form and size. His evergreens have improved wonderfully since I saw them three years ago. *Picea nobilis* 50 feet high, *P. pincapo* the same; *Cupressus Lawsoniana*, 40 feet; *C. Lawsoniana erecta viridis* (the original plant), 15 feet; *C. Lawsoniana grandis* (the original plant), 12 feet, and as much through; *Pinus ponderosa* finer than at Wordenethe; *P. Coulteri*, *very fine indeed*. We must go into that, it is so distinct and handsome. A wonderfully

beautiful new bronze yew (Waterer's seedling,) which I have ordered for you. He had just purchased for £25 five *Retinospora pisifera aurea*, said to be the finest in England, but not more than half the size of the big one at Wellesly.

I have picked out several little things for you, both at Waterer's and Veitch's, which I am sure you will be glad to have, especially Japan Evergreens, and some of the new things not yet in the market. I don't remember about *Pinus Coulteri*. I should think it would be hardy at any rate, if we have tried it already without success, we must do it again. Some of his *Azalies*, grown as standard, are stunning. If we could only grow *Abies Douglassii!* His plants, about 50 feet high, are superb, as is also the *Libocedrus*, about thirty feet high. In fact everything looked well with him,—the plants all healthy, and the nursery in fine order. It seems, too, that he is a farmer, and runs a 300 acre farm, and keeps a pack of hounds. He seemed delighted to see me, and is much pleased with the success of the Boston Exposition. To morrow he comes to town to take me out to the place of Bessimer, the steel man, whose place, he says, is wonderful, and who has purchased all his best plants.

Veitch is strong in Japan plants, which Waterer is not, and has the best *Retinosporas* going, also a great collection of the Japan *Acers*, and some fine Japan Oaks. His best *Retinosporas* were in tubs, just having come home from an exposition. You have larger and finer plants of nearly all the varieties. In fact, I believe the Japan Coniferæ do better with us than here. I have seen no such *R. obtusa* as the best one at Brookline, and in the other you are far ahead. I saw a few here that we have not yet, and which I have ordered for us. *Ret. obtusa aurea gracilis*, and *Ret. obtusa aurea nana*, are both different from what we have, and very beautiful. I have ordered you also a few Japan *Abies* that are very nice, but which have the most dreadful names.

Veitch has a superb stock of the Umbrella Pine, and it is so hardy with us you would, perhaps, do well to have some more, but I shall not order them till I hear from you on the subject. They are not very expensive. I am having a fine time with Dr. Hooker, who is most kind, and is doing everything in his power to make our visit a pleasant one.

It is no use trying to describe Kew, it would take a month. I have been hard at work for several days trying to see it, and have not got half through yet. I think I like the Temperate House the best. Here all the *Acacias*, *Araucarias*, *Dicksonias*, tender Pines, &c., are planted out. Also the collection of the Indian *Rhododendron*, many of which are now 20 feet high, and covered with buds. It must be a splendid sight to look down on them from the gallery above when they are in bloom! The big Palm House is entirely full, and the plants have reached the top, which, in the centre, is 65 feet from the ground. Succulent House 200 feet long by 40 wide, entirely filled,—the side benches with small plants; and the centre, standing on the ground, enormous *Cacti*, *Agaves*, &c. The effect you get on opening the door of this house is the most wonderful I have ever experienced,—1400 *species* of Ferns in cultivation! New Aboretum, 300 acres! In fact, everything. I only wish you were with me to enjoy it all. I am going to Paris Saturday, but shall be in England all of March.

[The above highly interesting letters to some personal friends, we have been kindly permitted to publish here.—ED.]

ADIANTUM FARLEYENSE.

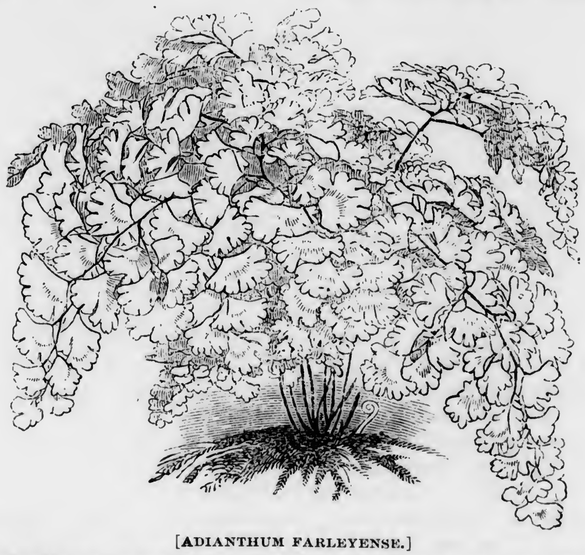
BY WM. BURNETT, GARDENER TO GARDNER BREWER, ESQ., NEWPORT, R. I.

Adiantum Farleyense is undoubtedly the most beautiful Adiantum in cultivation.

Although this variety is too tender in constitution to thrive elsewhere than in the temperature of the stove, its value for exhibition and decorative purposes cannot be over estimated. Indeed it is worthy of a place in the most select collections. First we will consider a few of the most important cultural details; but this subject may be dismissed in a few words: It is essential to secure an efficient drainage. Fill the pot about one-third of the depth with rather large crocks; place a layer of rough peat over them to prevent the fine part of the soil from running down between the crocks, and thus checking the escape of superfluous water.

It must not, however, be inferred from these remarks, that very little moisture is required at the roots. On the contrary, as liberal supplies are necessary when the plant is growing freely, unless it can drain away quickly, the soil becomes sour, and the roots perish in consequence. During the winter months the soil must be

maintained moderately moist. On no consideration must it be allowed to become dry. I have found it to thrive most luxuriantly in a compost consisting equal parts turfy loam and fibry peat, broken up roughly and well incorporated together, and then mixed with a liberal proportion of sharp silver or river-sand and small charcoal. A humid atmosphere with a temperature of 70° to 75° in summer, 60° to 65° in winter, is highly favorable to the development of clean healthy fronds, which can be easily secured by throwing water on the paths and stages in bright drying weather. The plant should never be syringed overhead.



[ADIANTHUM FARLEYENSE.]

To show to what size it may be grown, too, in a short time, I send you with this paper a photograph of the specimen we have here. It is 3 feet 9 inches in diameter, and 2 feet 4 inches high. The plant Mr. Brewer brought when in London, in June, 1872, then in a five-inch pot, after being in a packing case with other plants nearly three weeks. Those who have had experience in importing tender plants, can judge of its condition.

THE MULBERRY.

BY J. QUILL, CINCINNATI HOSPITAL, CINCINNATI, OHIO.

Why is the Mulberry so much neglected? Its leaves are food for the silk worm; its bark is good to make paper with; its fruit is good and wholesome, and it is useful in many ways that people do not perceive. It makes a better shade tree in the city than any tree I know of; and yet I search in vain for a well-grown specimen of this good old tree. I do meet, occasionally, on a poor grown specimen, but in such a wild state that it affords no shade nor beauty to the premises it grows in.

I had under my charge, in one of Cincinnati's grand institutions, a few Mulberries of the "Morus papyrifera" tribe. They were planted for shade, and pruned and cared for at my own discretion. Allowing them to branch six feet from the ground, but on no occasion were they allowed to throw up strong branches from side nor centre. Judicious pruning brought the branches to nearly the same size, thick and bushy, forming a well branched and round head.

The leaves of the Paper Mulberry are large and tough, growing very dense, and displaying themselves into various shapes,—scarcely any two leaves alike on the one tree. The branches droop a little at the top when laden heavily with leaves. This adds much to the beauty of the tree, as one branch after another droops gracefully under its heavy burden of fine foliage, giving the tree an aspect of taste and grandeur, shade and ornament.

One of these trees had a tendency to lean over from the regular line specified. To remedy this I was obliged to stake and wire it, first cutting a piece of hose, and laying the gummy part next the bark, then tying the wire tightly around this and securing it fast to the stake. The following May I noticed that the hose-band looked suspicious; it seemed as if it excluded air and confined moisture. I was anxious for the safety of the tree. I accordingly commenced to untie the band; when, to my utter surprise, I found that young roots from the hard wood within had penetrated through the bark and into the hose. This was done on the side where the pressure was most. The roots had struck in a mass. Some finding the gum too tough to pierce, had again entered the bark. More of them, impatient for room, had pushed their way out between the band and the bark; and finding the dry air not inviting for their purpose, had returned to their original place. This shows that the old method of propagating by laying, could be greatly improved upon.

Any soil or location will do to grow the Mulberry in, providing the ground is well drained, and plenty of room to spread its roots. Too long we have delayed its introduction as a shade tree in the city, where, as a rule, the soil is poor and well drained. The roots push their way in the ground strong and vigorous, heeding not the stones nor brickbats that come in their way, but drawing nourishment from the poorest kind of soil below. Water is acceptable to it at any time. If it cannot have this with convenience, it will not suffer from the longest drought, but go on with its work of shade, beauty and ornament. I will have more to say another time on shade trees in the city.

EDITORIAL.

TRAVELING RECOLLECTIONS, No. 5.

It will not be long before one may get on the cars at Philadelphia, go through to the Rocky Mountains, and then start south many hundreds of miles round through the city of Mexico to the Atlantic Ocean by a continuous line of railroad. Lines are now being laid at various points, extending up and down; and it will be, perhaps at most, within three years, that they meet continuously. The Denver and Rio Grande Railroad, at our visit, had already reached Pueblo, where we spent a short time. The Fountain River runs parallel with the Rocky Mountain range, until at Pueblo it enters the main stream, the Arkansas. The railroad runs along the Fountain, and the waters are extensively used for irrigation, which, as in all this section of country, is the basis of all culture. Those who talk in Congress and elsewhere, about irrigating millions of acres by these mountain streams, and thereby supporting untold numbers of people, can scarcely have seen these rivulets. The volume of water is very limited. The Schuylkill, which barely supplies Philadelphia with the water it wants at some seasons, is an ocean compared with these streams, and yet how much would the Schuylkill yield, if it had to irrigate thousands of acres of thirsty land besides. And this land is particularly of a thirsty character. It is formed wholly of matter which, in the course of ages, has been washed from the immense hills on the west. The granite rock, of which the Rockies are here formed, is of a singularly destructible nature, and crumbles rapidly under the combined action of frost and snow.

All along this route are what are called buttes, which are rounded hillocks, of perhaps from thirty to a hundred feet or so high, rising from a level plain, and which are the tops of hills which, perhaps, were many hundreds, or perhaps thousands of feet high, now almost buried by the decomposed rock from the immense hills. One of these little humps was 6000 feet above the level of the sea, or as high as Mount Washington, yet we could climb to the top in a quarter of an hour. This filling up, and consequent elevation of the level land at the expense of the degrading hills, must be going on in these comparatively recent times. Here and there cottonwoods could be seen which had been evidently much filled about since they had been growing there. A Pueblo gentleman informed the writer that some old stems of cottonwood had been traced down thirty feet from the surface, in the Fountain Valley. The cottonwood is one of the most valuable of all trees in this part of the world. It is remarkable that the seed evidently will not germinate, unless in a wet season or wet time, and in a wet place; but after the seed has once sprouted, it will grow in the dryest and hottest places more easily than any other tree.

It is everything to these far away people,—firewood, shade tree, and timber. There seems to be four species here. The Populus monilifera, P. augustifolia, P. angulata, and another not described that we know. Most of the large trees seem to belong to the *P. angulata*, and the unknown form seemed like unto it. There was no chance to get any branches for examination from these large old trees. The size of some of them was immense. One measured twenty-six feet round, and our friend told us thirty feet was not uncommon, while one had measured thirty-three feet. This is approaching the giants of the coniferæ class in California. These large old trees, at a distance, have very much the appearance of well-formed oaks.

Pueblo, though at present containing but perhaps 4000 inhabitants, is a live place. Though Denver is now the capital, Pueblo does not know but it may not be so always, and is looking ahead for what may be a brilliant future. Around the town they have laid out about 1000 acres in new streets and drives, and last spring set out *ten thousand* cottonwood trees, for shade along these streets, *all* of which were growing well, and yet these trees were about *nine inches* in circumference, and brought from River Bottoms, some sixty miles away. One of the tributaries of the Arkansas is used for irrigating purposes, and the water is led along each street near the roots of the cottonwood trees. The great secret of success in this immense piece of planting is the trimming. Each tree is trimmed and cut back to a mere pole. The land around here has a singularly arid and barren look, but when irrigated, as in other parts of Colorado, produces abundant crops. In its natural condition, it had little more than the gama grass, (Boutelouia oligostachya,) Yucca augustifolia, the various gray shrubs all known as Sage and Greasewood, and the arborescent Cactus, which everywhere abounds. Whatever cattle could find to live on in such a waste as this was a mystery; and yet cattle were everywhere seen grazing, and the cattle trade is one of the leading interests of the place. The thermometer was 86° when we were here, but a cool pleasant breeze prevailing. The winters are not cold. The thermometer has been known to fall to 22°. The Cactus is said to be an excellent ingredient in soups, and a favorite food with the antelope, which abounds here. We presume there must be some elk also, as the writer saw some enormous horns bleaching on the plains, which could not have weighed less than seventy-five pounds—a rather heavy load for these animals to bear on their heads for the mere fun of the thing.

Many of the inhabitants are Mexicans, the descendants of the slaves of Montezuma, with the ancient Aborigines. The Pueblo Indians, who still exist as a tribe, not far away from here, are unlike most of our other natives. They live by agriculture, and are said to be a highly cultivated and moral race. The "noble red man" will probably be found among them; and perhaps much more about the early history of our continent than has been discovered so far. The Mexicans live in a quarter by themselves, and their peculiar one story, flat-roofed adobe dwellings, were in striking contrast with the convenient houses of the northern man. Of gardening there is little visible. Here and there a few fruit trees were coming on; and one person had ventured on four small silver maple trees before his door, instead of the all-pervading cottonwood. Flowers in windows, however, were by no means uncommon—and there is a live agricultural society in the town. The hospitalities of the people were unbounded; and at the conclusion of our visit, Mr. Josiah Hoopes, whom we had elected captain for this portion of our excursion, returned brief but well expressed thanks for the civilities extended to us.

From here we started back for a two weeks wandering, with our tents and baggage wagons, for a two weeks' wandering among wild nature. On the first of August we started by the way of Clear Creek canon, with the view of making Gray's Peak as the turning point of our trip. Sending our teams and baggage a day ahead, we accepted the kind offer of the Clear Creek Railroad Company, to go part of our way up their new narrow gauge road, which we did with the excellent company of Mr. Scott, Superintendent of the Road. These narrow gauge roads are among the most valuable inventions of the age. Tracks a little over two feet wide, running up steep and narrow gorges, carrying us around rocks a thousand feet high, and over chasms hundreds of feet deep, with the roaring and rushing waters tumbling over huge obstructions like immense piles of moving snow beneath, could never have been a success on any other plan. The sensation was novel in the extreme, and will make a deep impression on any one who experiences it for the first time. But this day's trip was not favorable to scientific study, and the "naturals" of the party

were not sorry, when early in the afternoon of the second day, camp was fixed for the night in a blooming valley; and though the rain had fallen in torrents, the botanists, entomologists, and mineralogists, went off in various directions to make the best of the three or four hours of daylight remaining to us. To some it might not have been an enjoyable trip. With shoes, stockings, and legs of pantaloons and drawers wet through, by long tramps through rank wet grass, and yielding swamps, and the whole make-up decidedly damp from the rain drippings from the leaves in the thick aspen woods, and no place for thoughts of warm parlor fires, or other creature comforts on our return; the prospect would not perhaps be inviting; but our zealous friends declared that the immense tracts of gorgeous Calochortus flowers we passed every once in a while, was payment in full for all their trials and sufferings, if indeed, they ever thought of them at meal time. A little twinge of something lost might perhaps arise, as damp and chilly we rolled ourselves more closely in our blankets during the night, and tried to find out the softest place on the friendly ground; but with the morning light we would look on the splendid harvest of the day gone by, and all would be well again. Our bacon and coffee went down with a relish, and soon after sunrise we were on the road again. And so we journeyed, until after many days following the line of Clear Creek, we found ourselves at the little village of Georgetown, which may, perhaps, be said to be the beginning of the ascent of Gray's Mountain or "Peak." We are already about 8500 feet above the level of the sea. It is a queer place for a town. There happened to be a space of about half a mile wide on a sort of little table of land, and here the settlement began; yet though sheltered by two immense ridges of hills, the winds here are at times so tremendous, that many of the houses have to be shored up by immense timbers placed as buttresses on the outside. The town is the jumping off place for those who propose to go quite out of the world; and here ponies were engaged for those of our party who feared to trust their own feet for the mighty journey we expected on the next day. The road which winds around the hills is not much more than eight feet wide; and the sensation is not of the pleasantest, when you look down from your wagon, perhaps six or eight hundred feet, in an almost perpendicular line on the waters below, with as much more of shelving rocks above you, and the mules on a trot with the driver holding a considerable sized bottle of whiskey to his lips. We soon, however, came to the conclusion, that no amount of the "critter" would kill "Dave," and we gradually gained confidence, except when once in a while the problem had to be solved how we could get two wagons, requiring fourteen feet of space, past each other over an eight feet road, when said two wagons met each other, as they sometimes would. However, men who can get off a quart of whiskey at a draught, and not get particularly fuddled, are not likely to be confused by problems like these, and they generally managed to get us by without using us as illustrations of how the avalanches rush down these mountain sides. At one time, however, it took them nearly an hour to accomplish the feat, but even these accidents are God-sends to the naturalist, as they afford him the opportunity of more time to examine the nature of things about him. The only timber here is of the small leaved Aspen, which, in some places, reached a height of 50 feet, and gave a strong expression to the scenery by its very white stems, as white as if they had been all whitewashed,—and a few species of Pines—mostly here Pinus contorta. This pine has its specific name from a curious twisting of the branches, which, however, is not noted often in these Colorado forms; but we passed a lot which had a remarkable tendency to have fasciated or bunched branches, and all of these trees had the more or less twisted form. At about 10,000 feet we turn off from the main canon, and up Gray's Mountain proper. The mules can scarcely pull the empty wagon up the rocky road, and so thus gave an excellent chance for foot explorations, of which some half dozen or so of us gladly avail ourselves, and we walk up the steep and rugged track, as far as timber grows, where we take our coffee and bacon, roll ourselves in our blankets, and rest on a couch of fir branches till we see, by the brilliant red streaks through an opening to the west, that somewhere in the east the sun had risen. In our chasm, however, we did not expect to see him till noon; and as we expected to see his all-beholding face on the top at that time, we did not concern ourselves much about his absence. The morn was cold and chilly; and the air, at some 12,000 feet above the sea, rather difficult to breathe. Most of our friends lingered longer in their rustic couches than usual, some on account of headaches from the

rarified atmosphere, and others dwelling poetically, it is to be supposed, on the arduous task before them. But botanists cannot stop to dwell on themes like these. Up with the "lark," or magpies perhaps, they were busy as bees would have been, if any had been there, over the beautiful rosy patches of what we might call the Rocky Mountain Auricula, Primula Parryi, or measuring the height (about 100 feet) or the circumference (about 8 feet) of the grandest Coniferæ of this part of the world, Abies Engelmannii. A tree quite as vigorous as the Norway Spruce, and yet of the purest pearly blue, nothing can be finer. This is the last tree we meet before we leave behind us all arboreal vegetation. A little lower down we leave Pinus Balfouriana (*P. aristata*), and lower still Picea grandis, which can always be readily distinguished from all the pines and spruces by its smooth silvery bark even when quite old. There are many beautiful flowers, chiefly of Pentstemons and Gentians, with Pyrolas and the charming Linnea borealis, through the pine forests as we ascend; but Flora in all her glory bursts forth on us only as we leave the timber to go high up over the rugged rocks beyond. First we come on acres of the large blue and white columbine, Aquilegia cœrulea, one of the most beautiful hardy herbaceous plants known,—and mixed with them myriads of straight white spikes of Polygonum bistorta, the delicious fragrance of which completely filled the air. Then there was in every direction the deep blue of the Rocky Mountain Larkspur, Delphinium Menziesii, and the charming red and blue bells of the Siberian Lurgwort, Mertensia Sibirica. Freemont once wrote about a solitary bee, which taught him that he had life and companionship even in the highest point of one of these desolate wastes, and travelers since "never could find these bees." But here they were in countless numbers on these Polygonums and Pulmonaries, as happy and contented as if they were among the busy haunts of men. We pass clumps of low willows, Salix arctica, and Salix reticulata, Phacelias, Pentstemons, Swertia, until gradually all vegetation passes away except a small Calandrina (Talinum pygmaum of authors), and a small blue Eretrichium no larger than a small moss, which accompany us clear to the top. It has been a slow and labored task. With steps but two or three inches at a time, and at the rate of about four a minute, and laying down every hundred yards or so to blow and breathe, we still can look on the scene—the country stretching away on every side for hundreds of miles,—snow deep in the rifts on each side of us, and green fields in the plains far away below,—a cool almost freezing wind on our backs, and a clear burning sun in our faces. Friend "Rural" and the writer sought a cosy sheltered spot, and refreshed ourselves with a short sleep, after which we descended as we came, on foot, to our camping ground. Thus the editorial party disported themselves day by day in the great wilderness, reaping instruction from every passing scene; and like the wild bees of the mountain top, storing up immense treasuries of knowledge, from which to draw from far into the future.

NEW FACTS IN GRAPE CULTURE.

We have before us the report of Prof. Planchon to the French Government, in regard to his investigations of the ravages of the Phylloxera in this country. His conclusions are that the American and French insects are the same,—that the well-known failure of the European grape in the open air with us east of the Rocky Mountain is due to the Phylloxera,—some vines attacked by the Phylloxera do well in spite of the attacks of the insect,—a small insect, Tyroglyphus phylloxera, is an inveterate foe to the grape vine insect, and in many respects keeps it down,—the Phylloxera avoids the Scuppernong.

We are not sure that these positions of Prof. Planchon clear up every disputed point; but that they do in a great measure we have no doubt. Every one knows how the foreign grapes fail with us. In many instances they do well for a year or two, and often for several years; but in the end all give way. Some, however, do better than others. Golden Chasselas has been known to keep healthy in many cases for a number of years. When they die, or prepare for death, they usually give evidence of mildew, and it is easy to conclude that the mildew is the primary cause, the beginning and the end of the disease. In some cases it may be that it is so; but it is certainly a fact that any thing which injures the young fibrous roots of the grape vine, will result soon after in mildewed leaves. Those who have had experience in the culture of the grape in pots, know that this is so. Let a grape which is over-potted, as it is technically called, get the soil soddened or soured with water, so as to injure the young fibres, and mildew invariably follows, though all around those which are able to drink up all the water

from the soil, as fast as it enters all around the sick plant keep quite free from mildew disorders. If the Phylloxera eats the young fibrous roots, and thus affects the nutrition, the effect would be naturally the same on the leaves, and mildew would follow.

It is a remarkable fact, as Mr. Planchon says, that the insect is evidently partial to the Clinton, and yet the Clinton does not suffer much! The writer assisted Mr. Planchon one day in his investigations; and while that gentlemen rests satisfied with stating the fact, the writer saw clearly why the fact was so. In digging about the various vines it was remarkable how varied was the power to produce numerous fibrous roots. Some had long thread or cord-like roots with very few branching fibres—others, and the Clinton and Concord were two of these, pushed lateral fibres in every direction. Those with a few producing fibres were, of course, soon "devoured;" but as soon as one fibre is affected in the Clinton another is produced, and though we found on some Clinton roots as many or perhaps more insects as in other kinds, there were hundreds of little rootlets free from their attacks, and this sufficiently explained why the vines grew so well in spite of their insect enemies. The roots were literally "too much for them."

This fact being established, we have gained a great point in grape culture. We knew before that roots are always produced in proportion to growth; and as we must now favor root production, we must look to growth more than we have done. A vine closely summer pruned, and prevented from making a free growth, will not make many new roots; and this matter, therefore, will enter into the root-insect question considerably.

Of course there can be many questions asked, which will have to wait for answers. Why is not the insect more destructive than it has been found to be so far in graperies where the foreign grape is grown? and why is not the insect found in California? There may or may not be satisfactory answers to these or other questions. We need not, for all this, lose sight of the ascertained facts that where the Phylloxera has been found on the roots of the grape vine, most of the fibrous roots have been found *dead*,—that the continuous destruction of fibres as they grow *must be* injurious to the health of the vine,—that such attacked vines *are* all more or less diseased,—and that this tendency more or less to suffer, is graded by the ability of the variety to continually re-produce new rootlets.

These are facts. We gain this much knowledge, whatever else may go.

EDITORIAL NOTES.

DOMESTIC.

Traveling Recollections.—We have only just been able to get examined and named the collection of dried plants made on the late editorial excursion, hence will probably have made some mistakes in the identity of some of the plants referred to, or some points about them. Our good friend of the *Agriculturist*, with a complimentary notice as to the general accuracy of the *Gardener's Monthly*, kindly corrects us in regard to the rarity of *Centaurea Americana*. We are glad to know that this very beautiful annual is more cultivated than we thought it was. Again we find that the beautiful waxy-leaved Ampelopsis we referred to, is not Mr. Buckley's species, but *Vitis* (cissus) *incisa* of Nuttall.

Mr. Burr also tells us that that beautiful dense headed "Pride of China" near the railroad station at Dallas, Texas, "is not a *trimmed* tree," but a natural growth. "Your readers in this section have enjoyed a good laugh at your expense." All right. There are many more than one, however, to pay for that joke. It is this closely growing form which always re-produces itself in that way that Mr. Buckley proposes to make a species of, as recently noted in the *Monthly*.

Lastly we have a note from Mr. Buckley himself, in which he corrects us in supposing that the peculiar form of post oak we referred to as growing in that part of Texas, is his species. He says *Quercus Durandii* does not grow in that part of the State.

Mr. B. also objects to our calling the lovely silver leaved wild grape vine of that section *Vitis candicans*. Dr. Engelmann had called it this, but had not described it. Mr. B. was the first one to *describe* it, and called it Vitis Mustangensis, from the Mustang River, and because it was popularly known as the Mustang Grape. We think Mr. Buckley is right in this, but the name *candicans* is so expressive, that though granting Mr. Buckley's right to his name, it is almost to be regretted that Engelmann's name was not adopted. In regard to another species of Texan oak, Mr. Buckley says: "Another species of oak, the Quercus San Sabasna, has lobed leaves, smaller than the post oak. This is a shrub

growing in clumps on the limestone hills in Burnet and San Saba counties. This has scaly bark, and is called the 'Shin Oak.' Many years ago, before I came to Texas, Engelmann showed me specimens of it without fruit, at the same time telling me it was a new species from Texas, which had not been described for want of the fruit."

Photographs, &c.—Mr. Vick's chromo this season is pronounced to be his greatest success in this line. It is a design for a floral decoration, representing a cross standing in a church. The flowers are arranged with good taste; and the list given in the key, which accompanies the picture, gives a good lesson as to what flowers to employ.

We have also a photograph of the interior of the beautiful conservatory of Henry C. Gibson, Esq., of this city. Mr. G.'s conservatory is not very large, in the ordinary sense of the word, as it is attached to his town residence; but the arrangement is so judicious that it appears double the size it really is. The plants are chiefly confined to the rarest that can be obtained in any part of the world.

Schedule of Premiums of the Massachusetts Horticultural Society for 1874, *from E. W. Buswell, Secretary.*—The Azalea Exhibition, (best six $25 and so on) April 25th. In June (6th to the 12th) the Rhododendron is an especial feature. 17th to 18th of June is especially the rose exhibition. Besides numerous other specialties for various months, there is an especial Chrysanthemum show November 7th. $1900 are appropriated as premiums for fruits alone. Mr. Whitcomb offers a premium for the best seedling potato originated since 1870, of $200

Greenhouses Burned.—In some of our exchange papers we note that many greenhouses have been burned this winter. It should never be forgotten, that wood will, *in time*, take fire without actual contact with flame. One of the fires we have read of took place through hay being in contact with hot water pipes. Another fire occurred from a few hundred sheets of oil paper which "spontaneously combusted" in a close box.

Adiantum Farleyense.—Mr. Bennet, who gives us an article in this month's magazine on the growth of this plant, sends us a photograph of one he has grown. It is a model of excellent culture. The cut we give with this article is taken from a smaller plant grown by Mr. Robert Buist, of the Rosedale Nurseries, the original introducer of this beautiful fern.

Trees and Climate.—We are told that at a late meeting in Sterling, Ill., of influential horticulturists, it was "resolved that the position recently taken by Thomas Meehan, of Pennsylvania, on the influence of forests on climatology is not tenable and calculated to mislead and discourage tree planting."

The joke in the above is that "Thomas Meehan" took no "position." Dr. Hough, of Albany, took the "position," of which the following in substance in a specimen: Since the Mormons settled at Salt Lake, and planted extensively, the rain-fall has so much increased that the waters of Salt Lake have risen six feet in consequence. "Thomas Meehan" pointed out that the Mormons have cut away nearly all the timber which grew on the surrounding hills,—that they have planted but a few thousand fruit and shade trees about their door yards and gardens,—not a tithe of what they have cut away—and if even the trees planted had been ever so numerous, the idea that the rain-fall would so increase by a planting of trees here and there, mixed with houses over about three square miles, so as to raise a sheet of water occupying *two thousand square miles*, six feet in ten years, would be too preposterous for belief. If the Sterling folks believe that such nonsense as this aids tree planting, Thomas Meehan is content to be "read out" of that party. He goes for "reform," that's certain. He will go out in good company, however.

The *Country Gentleman*, just to hand, referring to a similar transaction, concludes by saying as T. M. did: "The fact is, opinions as to the amount of rain-fall, changes of temperature, &c., must be submitted to the test of long and actual measurements, and *these, where made, indicate no material change.*"

Critical Points.—Some interesting logical studies sometimes arise in horticultural discussions. For instance: M. Planchon spent some three months in America investigating the grape-disease. Mr. Laliman—whoever he may be—in a French paper, differs from M. Planchon's conclusions, and one of his arguments is that three months is not long enough in the United States to settle the question. One cannot see why not if an observer is at all industrious. But granting the soundness of this proposition, Mr. Laliman proceeds to "settle the question" himself, though it does not appear that he has been in the United States at all.

Seeds for only Ten Cents.—We have a letter from a Rev. Mr. Copeland, enclosing a certificate of good character from a Rev. Mr. Brownell, in

which our reverend friend tells us he is boiling over with a desire to do great good to his fellow creatures, and therefore "only for ten cents," he will send seeds worth fifty cents to anybody who wants them; and such is his intense passion for horticulture, that he will actually subscribe for the *Gardener's Monthly* if we will only make this announcement. It struck us as rather odd that there should be any human being so overflowing with love for his fellows, and for horticulture, as to need any inducement to "subscribe;" but as he tells us he "expects Judd will put this in his *Agriculturist*, also, other papers," we thought we might go in good company. So we expect the Rev. J. Copeland will send the publisher two dollars, as soon as he reads this notice.

Turning up the Soil.—Some time ago, we made some suggestions drawn from our own observations—not recommending that ground should not be turned up—but showing that in some cases some very remarkable results had been obtained by simply stirring the surface, and not turning the bottom soil up as in the ordinary way. The *Canada Farmer* for February now gives some more stubborn facts of the same sort. It says that common sense teaches that good surface soil should be kept at the surface, and further that those who have tried it pronounce it an effective system of cultivation.

FOREIGN.

New Dwarf French Bean.—As advertised in the English papers, "Williams' Early Prolific" seems to be a good thing. It is said to be very dwarf and very prolific,—which, if the picture tells the truth, it may be.

Duke of Edinburg Cucumber.—Last spring the English papers had a figure of the Marquis of Lorne cucumber, which had grown half way down the page—now it has grown down so as to occupy two-thirds the page under the above name. It will, no doubt, reach the bottom of the page by next spring, when it will be Princess Alexandra or something else.

The "Magic Bouquet Holder," is a contrivance introduced in England, which encloses the handle or stem of the bouquet, similar to our ordinary tinfoil,—but can be spread apart so as to make a small tripod, when there is occasion to lay it down. It *stands* instead of lies down.

The Price of Orchids.—Says the *Garden:* At a sale at Stevens', single plants of the rare and beautiful white-flowered Odontoglossum Roezlii realized from £5 5s. to £16. Ten thousand bulbs of Lilium auratum, newly imported, also fetched good prices, notwithstanding other large importations lately received.

Hale's Early Peach in England.—It is remarkable that while some cultivators here are rating Early Beatrice beyond all things,—"even Hale's Early,"—some English growers are enthusiastic on Hale's Early, "even beyond Early Beatrice."

Hollyhock Disease.—For some years American growers of the Hollyhock have suffered from a disease which the *Gardener's Monthly* has regarded as fungoid; but growers generally term "sun scald." We suppose it the same as that referred to in the following extract from the *Gardener's Chronicle:* At the January meeting of the Royal Horticultural Society, Professor Thiselton Dyer said there were so few subjects for comment before the meeting, that he would take the opportunity of making a few observations on a new cryptogamtic parasite, which had, within the last year, invaded our gardens, and was likely to cause a deal of trouble. This, said the Professor, is the Puccinia Malvacearum, first described by Montagne from specimens collected in Chili by Bertero. It that country it principally attacked the Marsh Mallow, Althæa officinalis. Its first appearance as a pest of cultivation was in Australia, where, whether accidentally introduced or not, it became exceedingly destructive to Hollyhocks. It has also during the past year attacked these plants in this country, while in France, where it has also been noted, it appears to have fallen with greatest severity on the indigenous Malvaceæ. The Rev. M. J. Berkeley remarks, that until July 12th of last year it was, as far as he was aware, entirely unknown in this country (*Gardener's Chronicle*, 1873, p. 946), and it does not appear in Cook's *Handbook of British Fungi* as a British species. At the beginning of August it was mentioned as completely destroying the Hollyhocks in the gardens near Sandown (*Gardener's Chronicle*, 1873, p. 1051). It has lately made its appearance in nurseries in the neighborhood of London with serious and lamentable effects. In France it appears to have been met with on the Hollyhock on June 26th of last year.

Improved Bush Beans.—A variety called Canadian Wonder has been produced in England a foot long.

Gardening in England—A correspondent of the *Gardener's Chronicle* says that the past season in the floricultural line, has been one of lavish expense.

The Ripening of Peaches.—Mr. Brehaut says that trees vary in their time of ripening from some cause or another. When he first fruited the Belle de Doue, it used to ripen about July 30th. Every year it was earlier. In fourteen years it had advanced in precocity, so that it ripened on the 28th of June,—over a *month* of difference.

Dutch Bulbs.—The *Gardener's Chronicle* says the demand for Hyacinth bulbs in England exceeded the supply,—the new varieties have been real acquisitions. Tulips were largely in demand, but presented no improvement. The trade in Crocusses has fallen off considerably. Hardly any demand for Narcissus. Snowdrops have sold astonishingly, one grower alone selling 1,180,000 bulbs. Lily of the Valley and other roots for forcing purposes, meet with ready sales.

Profit of Timber Culture in France.—A correspondent of the *Gardener's Chronicle* says the departments of the Gironde, an immense tract of shifting sand, near 100,000 acres as reported, was planted with the Sea Pine, *Pinus maritima*, and that the rosin alone yielded a clear profit of 20 per cent. How long they have been planted is not stated.

Insects on Coniferæ Roots.—The *Gardener's Chronicle* says that *Cynips aptera* has been found to attack and produce galls on the roots of the Deodar Cedar. It also does the same on the roots of Oaks and Elms. It has always been believed that an insect attacking ordinary deciduous trees, would not also engage on Coniferæ. But this old notion is now to be set aside.

Eucalyptus globulus.—Some attempt has been made to give this tree peculiar climatal and medicinal powers. The claim has been proved hardly tenable; and now comes another philosopher who shows that there are two varieties, one with the leaves a trifle narrower than the other, and the one worthless and the other wonderful. We supposed so.

SCRAPS AND QUERIES.

THE POTATO DISEASE.—A *correspondent* sends us an excellent essay on the Potato disease, on which he asks our opinion. The experiments detailed relate to crossing the various varieties, and the results are so interesting, that at some future time we may refer to them. The pith of the paper, however, is the following: "It is highly probable that if some man, possessed of the requisite knowledge and skill, were to go to South America, and there seek out the healthiest locality where the potato is indigenous, and instead of taking the cultivated varieties, select from the healthiest wild vines, and bring them by good cultivation to a proper degree of perfection in their native habitat, then select from these the very earliest that could be produced there, and bring them to this climate with all their native vigor unimpaired, we might thus obtain seedlings of original health and vigor of constitution. The expense, of course, would be considerable, but if the Government could be induced to rise above mere political consideration, and appoint some such person our Minister to Chili, and perhaps one or two other South American States upon the Pacific coast, and Congress make the necessary provision for his or their additional expenses, this greatly-to-be-desired result might be brought about without much outlay of money. Or if some society, or wealthy individual, would undertake the matter, great public good to all mankind might thus be accomplished."

As we read this, we remarked to ourselves, why the consuls at these various places could get persons on the spot to gather wild seed, and besides, the wild seed has been already tried by Goodrich and others, but reading on, we found the following:

"For fear that it will be asserted that this trial has already been made, I will add that the original, and all subsequent importations from which our existing varieties were derived, were, in all probability, old varieties when imported, and may have been cultivated by the Incas, or possibly the lost races, whose remains are there so plentifully scattered, and they have probably never been brought by seedlings and cultivated from the wild vine since the commencement of their cultivation, for there is not much enterprise in Spanish America. It will do no good

to try it in this climate again. Therein is where Mr. Goodrich failed in his trial of 15,000 seedlings, from both wild and cultivated vines. It may be that if it were done in the mountain regions of North Carolina, New Mexico, Colorado, or California, the trial would be partially successful. The experiment should be made. Wherever tried it will take a good while, for it cannot be done without going through the seed balls a number of times."

Still there remains the objection that the original potato, introduced by Sir Walter Raleigh, was no more wild than those introduced by Goodrich, but tubers grown by these same "Incas;" and yet these tubers, cut and otherwise, for planting, continued *perfectly* sound and good until 1845, when they suddenly, and as if by a paralytic stroke, went over. It is also worthy of note, that the potato has never been so badly diseased since as it was then, when the writer saw a lot of perhaps a thousand bushels, all rot in the ground within a week or so. The disease has gradually abated, and is, we think, abating: and this appears to be against our friend's theory, that there is a *natural* debility or decline in our cultivated kinds.

FORCING STRAWBERRIES.—*A. D. L., Stratford, Fairfield County, Conn.*, writes: "The paper on 'Forcing Houses for Strawberries,' by Charles Gruneberg, in volume for 1865, above number, treats mainly of the construction of the buildings suitable for the purpose. So far, I have failed to find any work which gives a minute statement of the treatment of the plants. If you can give me, in the next number of the *Gardener's Monthly* or otherwise, the title of a detailed treatise on forcing Strawberries, either American or European, I shall esteem it a favor. I am familiar with A. S. Fuller on the subject."

[There is no work that we know of, which makes a specialty of this subject, but it is very easy to prepare Strawberries for forcing. As soon as the runners have pushed enough to have the appearance of a plant at the end, provide two or three inch pots, filled with very rich soil, and bring them even with the surface. Place the young plant on the pot, with a piece of potsherd, a stone, or clod, or anything on the runner, to keep it in place. The roots will then push down into this good soil, and soon fill the little pots with roots. Then cut them off, and pot into five or six inch pots of rich soil plunging these in the ground in a bed by themselves. They will then make very strong plants by fall, and are ready for forcing. Almost all plants force better if well ripened, as it is technically called. These pots are, therefore, taken up out of the ground about the fall of the leaf, and stood on the surface instead of being plunged in it. The crowns seem to mature better for this treatment, but these are little niceties which people can learn well only by actual experience. As cold weather approaches, the pots must be covered with dry leaves, or placed in a shed or some other place, just secure from frost, so as to be got at easily, as wanted through the winter.]

THE ROSE ACACIA.—*M. B., Cincinnati, O.*, writes: "When in Europe a couple of years ago, I was much struck with the great beauty of the Rose Acacia. I am anxious to have one in my collection, but do not see it in any catalogue. Is it not grown in the United States?"

[It is in some catalogues. Here, in the East, it is so eagerly sought after by the Locust borer, that it has been gradually killed out. We do not know of any one who has any hereabouts now.]

IVY "JAPONICA VERSICOLOR."—*Mrs. A. B. C. N.* says: "I send a leaf of a small var. Ivy. Will it ever grow any? What is its name? What is it good for? It has grown about one inch in four years."

[This is what is known in nurseries as the tricolored Ivy. It appears, notwithstanding its "Japan" name, to be but a variety of the small leaved or Russian Ivy, with white edges, and often a very pretty rosy tint mixed with it. When growing freely, it is regarded as a pretty thing for baskets or parlor stands. We submitted our correspondent's inquiry to a lady, who is very successful in the parlor culture of Ivy. She says, "I think she does not keep her Ivy wet enough. The Ivy likes to be rather cool, and have much humidity about it, though by no means *wet*. I had several pots of this tricolor Ivy standing on my Orange tree tub, and it did not grow at all. I tied some of the branches up around the Orange stems, and all these pushed into growth before those which trailed on the ground. I think her Ivy would grow better if it could lay hold of something to run up."]

ROSES FOR THE WEST.—*A lady writing from Illinois*, says: "I see that the varieties of fruits which are recommended for cultivation in this

climate, are different from those which do well at the East. Can you tell how it will be with Roses? And if there *is* a difference, will you mention some such as would probably do well here of the Perpetual varieties?"

[We think that there are none of any of the classes of what are known as *Perpetual* Roses, that would be *perfectly* hardy in the Western Atlantic States. Hybrid perpetuals are the hardiest; but these are often more or less injured in severe winters. These are of the old cabbage rose class, and after blooming profusely in June, flower again more or less abundantly in September. A dozen of this class, which would do well in Indiana, Illinois, or any adjacent location, and which can be obtained from any florist in that section, might be Augusta Mie, Victor Verdier, Madame Charles Wood, La Reine, Caroline de Sansal, General Washington, General Jacqueminot, Louis Odier, La France, Prince Camille de Ropan, Triomphe de L'Exposition, Queen Victoria. Tea, China, and Bourbon Roses are, however, the real Perpetual Roses, flowering all through the season regularly. But these would not be hardy if unprotected. Mr. Fuller, of New York, however, has excellent success, by taking them up in the fall, trimming out the immature parts, and then burying up the whole plant in a dry spot with earth, taking them up and replanting them every spring. This is no more trouble than we take with Dahlias or Tuberoses, and in this way you can enjoy these beautiful kinds in your bleak part of the country. Of these, a good dozen easily obtained might be Hermosa, Saffrano, Souvenir de Malmaison, Louis Philip, Homer, Madame Bosanquet, Madame Russell, Mad. Falcot, Gloire de Dijou, Archduke Charles, Lady Warrender, Madame Breon.]

YELLOW PENTSTEMON.—*A Texas correspondent* speaks of finding a yellow Pentstemon, showy, lower leaves serrated or almost lobed, and rougher than ordinary Pentstemons, in the vicinity of the Trinity river. There are no known Pentstemons of this kind. They are usually white or purplish. It is probably a Gerardia.

CANNA SEED.—*Mrs. A. B. C. N.* asks: "How much and how long may we scald Canna seed? I always scald mine too much or too little—at any rate, cannot make them germinate. Would like to ask about fifty questions, but this must suffice for the present."

[We prefer soaking in cold water some time to scalding for a few moments. Keep them in cold water a *week* before sowing, and there will probably be no further difficulty. Not even "fifty" of these questions would frighten us. They are such as hundreds of our readers want to know, but are afraid to ask about.]

RESIDENCE OF MRS PACKER.—*A correspondent* says: "In your December number, the article on "The Gardens of Mrs. Packer," there were three mistakes. It should be *Brooklyn Heights* instead of Washington Heights. The vines planted in 1872 instead of 1873. Cerural beds should be *Circular*."

ADVERTISING, ETC.—It is a pity for their own sakes that people will not understand the difference between the Publisher and the Editor. Very often a week's delay occurs through matter intended for the publisher in Philadelphia, being sent to the Editor in Germantown. Even a day's delay sometimes makes all the difference. Last month, at least three important advertisements did not get in because they were sent to the Editor, who was at Mechanicsburg.

People also write to the Editor offering pay for notices of their business in some way, in the body of the work, as they say other papers do. We do not think it fair to the reader that what is really a paid advertisement, should appear as regular reading matter, and we beg to assure our readers that nothing of the kind has ever appeared in the *Gardener's Monthly*, or shall ever appear while the present Editor has control of its columns. The publisher has lost in our time several good advertisers through the editor refusing to do this mean thing; but though this is a loss to the publisher, it is a benefit to our readers, as it is an additional security that they who advertise fair and square in its columns, without seeking any unfair advantage over others, are honorable men, and just the kind to deal with. For certain reasons, which we need not here explain, we may say that the great seed-house of Vick of Rochester, has never directly or indirectly sought from us this despicable mode of advertising, and we regard it as one of the most honorable houses in the land.

WILLOW FOR RIVER BANKS.—*F. A. B., Leech's Corners, Mercer Co., Pa.*, asks: "Can you tell me the best willow to plant along the bank of a river to prevent its being worn away by the action of the water? Also, where it can be obtained. Please give the scientific name."

[Salix Russelliana is the commonest of basket willows grown in Pennsylvania, and would do well for the purpose named. It could be obtained from any locality where basket willows are grown.]

CLIMBING FERN.—*A., New Brunswick, N J.*, writes: "The enclosed sprig was plucked to-day from a bunch of wild plants growing near here and is certainly beautiful and rare. Its botanical name, and any hints as to its cultivation, will be of interest to some of your readers."

[This is now pretty well known in the large cities as the "New Haven Fern." Botanically, it is Lygodium palmatum. Large quantities are gathered in Connecticut and sent to Boston, where it enters largely into the chaste floral decorations of that cultivated place. It usually grows in swamps, but generally takes care to get into little hillocks above the water-level.]

ELONGATION OF TREE TRUNKS.—*W. G. B., Glen Mills*, writes: "The late trial relative to the backing up of water in a dam on the Wissahickon, has excited a good deal of interest. Several of your friends would be pleased to hear an expression of opinion from you relative to the rise of the mark placed many years ago, in the trunk of the Buttonwood tree. Would you have the kindness to inform us whether the trunks of large trees do extend perpendicularly?"

[We have not before us the particulars of the great trial to which our correspondent refers, but it was something like this: On account of "water rights" between some neighbors, it was necessary to get the exact level of water in a dam. Surveyors took the level, and in order to mark it, and "no mistake" for all time, bored a hole in a buttonwood tree, and drove in a wooden pin, so many inches exactly above the level. Many years afterwards, after some alterations had been made in the dam, water was backed up on to a neighbor higher than "agreed to as aforesaid," but on examination the water was found to be three inches higher than in times aforesaid, but yet exactly the distance down from the peg in the buttonwood tree. The question in court turned on the point whether one man had made his dam three inches higher than his original right—or whether the buttonwood had stretched upwards three inches, since the original survey. We are not sure, but we think the court decided that the buttonwood had stretched, and that the man had the right to elevate his water to "so many inches below the mark in the buttonwood tree."

Of course, we can only reply to this in the light of known facts. The increase of wood every year is by the germination of cells from the last year's circle of wood. These new cells push horizontally, and uniting together, make a new circle of wood over the old circle. The cells of the old circles never grow any more after this, there is no further extension upwards, downwards, or outwards, and if this is true, a peg driven into this old wood, *must* of necessity be held for ever after at one exact height. But this principle, which seems incontrovertible, need not only settle this question. Careful measurements have often been made, many of which are minutely described in Lindley's *Theory of Horticulture*, and these *figures* show that there is no elongation of a trunk once formed.

But, using only our reason, we can see a possibility that the *whole trunk* may have been lifted a little, enough to make three inches of difference. We have seen trees growing against walls of tremendous strength *thrust the walls completely* down by the lateral growth of the roots of trees. This growth force is tremendous. Now, supposing a tree to grow *on* a rock, instead of along side of it, and this great growth power pressing *down* on it. It could not, of course, force the rock down any further towards the centre of the earth, yet as these roots thicken, both on the under surface and on the upper, something has to give way, and it is not at all improbable, as we understand it, that the effect of three inches of wood growth on the *under surface* of large roots, and against the solid rock, would be to elevate the peg in the buttonwood tree—that is, the *whole tree* three inches.]

SEEDLING TREE CARNATION.—*J. W. C., Brighton, N. Y.*, says: "I see that in your answer to my question respecting the carnation sent you, that you call it the Defiance Tree Carnation. If, by this, you mean it a tree carnation, I will describe its growth and among what variety it was found, for it is not a tree carnation at all. The plant was found among a new variety which we have, and which is to be sent out this spring: this new one is a sport from the Astoria, and the reason I write this is, that I noticed one of these that had three of the

petals the same color as the one I sent you, the rest being of a lighter ground work and the stripes of a brighter red: both this one and that I sent you, have the growth of the Astoria, and also the same foliage. If it is the one you called it, I cannot see how it came on to the place, as the man that has had charge of them, says he never saw one like it before, and no new ones have been bought since he came, except the Bride."

[Perhaps we did wrong in calling Defiance a *tree* carnation. Perpetual or winter blooming carnations, are often called tree carnations, but there is difference enough to divide one from the other.]

AGAVE VIRGINICA.—*J. C. G., Knoxville, Tenn.*, sends some "bulbs" for a name, which we give as above. The plant is well worthy of cultivation—not for its beauty, (greenish white flower,) but for its curious structure, and very sweet odor. It is closely allied, botanically, to the tuberose, and its fragrance, though not as great as the tuberose, is still suggestive of it. We have been told by a Wilmington correspondent, that a variety of the same plant has been found in South Carolina, with leaves spotted with red. There is, no doubt, much good material for ornamental gardening to be found in these wild plants.

ORNAMENTAL LEAVED BEETS.—If any of our seedsmen have to offer the seeds of the new Ornamental Leaved Beets, noticed in our foreign intelligence of January, we shall be obliged by said catalogue being sent to Mrs. G. M. Higginson, Elmhurst, Dupage County, Illinois.

JERUSALEM ARTICHOKES.—*Layman, N. Y.*, writes: "Will you be kind enough to tell me something about 'Jerusalem Artichokes?' Why 'Jerusalem?' Why 'Artichokes?' I see no trace of them in either. Being a Jew, I know I ought to, but I don't, pleading guilty to utter ignorance of my ancestral home. As you are going, I would trouble you likewise to explain 'Jerusalem Cherries.' Here I ask again, why 'Jerusalem?' Why 'Cherries?' Perhaps you will say they do look like cherries (or red marbles). These Jerusalem Artichokes don't look like Artichokes. If you are not tired, throw in something about the Rose of Sharon. Is Sharon its home, or has the name been given it by some religiously enthusiastic botanist?"

[The original *Artichoke* is a large flower head, produced on a sort of thistle, which is boiled, and the scales pulled apart and eaten, or rather sucked. The derivation has been attempted, but merely guessed at, but no more satisfactorily than the origin of "cabbage," "pear," "oats" or "corn." No doubt these words had an original meaning, but the original language is not only a "dead one," but it has been evidently long buried.

Another Artichoke is that called "Jerusalem." It is a sort of sun-flower, and "Jerusalem" in this case is nearly the sound in English of a French word, which signifies sun flower. It is the "Sun-flower Artichoke." It is not a native of Jerusalem, but of the American Continent. We suppose it was called artichoke by mistake, by some one who did not know any better, and then "sun-flower" had to be tacked on to distinguish it. This happens in this day, even to the best of us. The Editors of *Hearth and Home* and *American Agriculturist*, for instance, are among the most intelligent in the country, and are seldom caught asleep, but (so Jove sometimes nods) they did once figure and describe a plant which is really *Talinum patens variegata* as "*Boussingaultia Lachaumii.*" So for distinction, we have to say Humboldt's Boussingaultia, when we mean the real Madeira vine, and Thurber's Boussingaultia, when we speak of the other.

The Rose of Sharon is not a rose, but the common Althœa of Gardens, which is a native of the country between the Mediterranean and the Black Sea. There is nothing, we think, significant in the name. Probably a mere fancy of some one.

HARDY PALMS FOR NEW ORLEANS.—*R.* asks: "Will you be so kind as to furnish in the next issue of the *Gardener's Monthly*, a short list of the hardiest palms? Are there any species except Phœnix dactylifera, Chamerops hystrix, and the three native Palmettos of the South-Eastern States, which will stand a temperature as low as 18° or 20° Fah.? The first mentioned grows very well in protected situations in this latitude, and attains a height of twenty or thirty feet, but are there not others which will do as well? Our lowest temperature this winter has been 27° Fah., but this has been an exceptionally mild season. Roses have bloomed all winter long: beds of annual Phlox are as brilliant as they were in October, and in

southern exposures Salvia splendens has not yet been killed. During our coldest winters, like the last, the glass touched 18° for one or two nights."

[There is little known as to the hardiness of palms. It is the general belief that many will stand much more cold than heretofore supposed. At the destruction of greenhouses by the bombardment of Paris, the palms suffered less than many other things by the cold. The following list would *probably* stand out at New Orleans, but only actual experiment will determine it positively. Many of them could be had of Mr. Buist, and most of George Such:

Areca	Baueri, (a beauty),
	lutescens,
	monostachya,
	sapida,
Astrocaryum	mexicanum,
Brahea	dulcis,
	egregia,
Calyptrogyne	elata,
Chamædorea	amazonica,
	concolor,
	desmoncoides,
	glaucifolia,
	lunata,
Chamerops	excelsa,
	(Fortunii) chinensis,
	humilis and varieties,
	Martiana,
Cocos	australis,
	plumosa,
Corypha	australis,
Deckeria	ventricosa,
Jubœa	spectabilis,
Latania	borbonica,
Livistonia	humilis,
	Jenkinsii,
Micrococos	Chilensis,
Morenia	corallina,
Phœnix	dactylifera,
	farinifera,
	humilis,
	pumisla,
	reclinata?
	sylvestris,
	tenuis,
Rhaphis	flabelliformis,
	variegata,
Sabal	Adansoni,
	Mocini,
	princeps,
	umbraculifera,
Scheelia	regia,
Seaforthia	elegans,
Syagruse	amara,
	cocoides,
	comosa,
Thrimax	parviflora.

TO QUERISTS.—A few items for this department unavoidably lie over till next month. Queries are always in order. We make this note, lest, finding them not noticed this month, friends may think they were unwelcome.

CELERY.—*J. W. S.* favors us with an excellent paper on celery culture, which shall appear in our next.

CHIEF GARDENER.—Gentlemen once in a while write to the editor for information for some first-class talent in landscape artist, or other of the higher branches of gardening, but he has not time to hunt them up when wanted. Just now he knows of just such an one who is disengaged—just the one for a garden or enterprise requiring high talent, and will with pleasure put any one in communication with him.

BOOKS, CATALOGUES, ETC.

THE TREASURY OF BOTANY.—By the late Dr. Lindley and Thomas Moore. New edition. London. Published by Longman, Green & Co., 37 Paternoster Row.—This is a closely printed work of some thirteen hundred pages, with a large number of illustrations in two duodecimo volumes, and comprises a short history of those genera of plants which are known to possess special interest on account of the medical qualities or the economical uses of their species, or by reason of their beauty or utility as garden plants. Also a selection of genera, which serve as representatives of the whole series of natural orders, with their sub-divisions. Besides this

there is a glossary of botanical terms, and a list of the English names of plants.

The first edition of this work was not quite completed on Mr. Lindley's death and that a second edition should be so soon called for, is one of the best tributes to its popularity. A work which would embrace all known plants, would be too voluminous and too expensive to be within the means of most people,—and indeed most people would not care to possess a book which was taken up with descriptions of plants which they never heard of, and are never likely to hear about. A work like this takes in every thing that one is likely to want to know about, and so meets just the general want.

To give an idea of the character of the work, we open at random, and give the sketch of

CERCIS, Judas tree.—This tree divides with the elder the ignominy of being that on which the arch traitor hung himself,—neither legend being worth the trouble of sifting. It is a native of the south of Europe, and several countries of Asia from Syria to Japan; and is a handsome low tree with a spreading head, easily distinguished among the Leguminous order by its simple glabrous, kidney-shaped leaves, and by its purple flowers, which are produced abundantly in May before the leaves, not only from the young twigs, but from the old branches, and even the main trunk. The flowers are succeeded by thin brown seed pods about six inches in length, which remain on the tree all the year. These are not generally produced in this country (England) unless the plant be trained against a wall; but in a warmer climate they perfect their seed in abundance, and afford a ready means of propagation. The leaves are remarkable for their unusual shape, for the pale bluish green of their upper surface, and for their sea-green hue beneath. The flowers have an agreeable acrid taste, and are sometimes mixed with salad, or made into fritters with batter, and the flower buds are pickled in vinegar. This species is known as *Cercis Siliquastrum*, from the conspicuous appearance of its seed vessels.

C. CANADENSIS (French Bauton Rouge, or red bud) bears a resemblance to the preceding, but is smaller and more slender. It may at once be detected by its leaves being heart-shaped and pointed. It is a native of North America, from Canada to Virginia, along the banks of rivers. The flowers are less numerous, and of a paler rose color. These are used by the French Canadians in salads and pickles, and the young branches to dye wool of a nankeen color. The wood of both species is hard, and variously marked with black, green, and yellow, on a grey ground. A new species, *C. chinensis*, which has been recently introduced from China, has sessile flowers, of which the standard is striped. French *Ganier; Abre de Judie;* German *Judasbaum.*

Thus it goes with things one is likely to know. There are briefer accounts of uncommon things. For instance:

APTERIA *setacea.*—An obscure North American plant, related to *Burmannia*, but destitute of wings to the fruit.

Or of botanical terms, as

APOTHECIA.—The stuelds of Lichens,—firm bony discs arising from a thallus, &c.,—containing spores.

It is indeed what its name imports, a *treasury* of botanical knowledge, and a most valuable addition to any horticultural library.

It can, no doubt, be obtained through any American importing bookseller, or direct from the publishers in London. The postage is much reduced on these matters now. These came through for thirty-nine pence postage.

CATALOGUES.—We are in receipt of several *hundred* of these, many of which invite us to "please notice," which we would gladly do if we had space, for many of them richly deserve it. But the lot before us would take some three pages, and we fear our readers would not like to have so much reading space thus occupied. We are, however, thankful for these catalogues; and are always glad to receive them.

A NEW WORK ON EVERGREENS.—Mr. Gordon is to have soon a new edition of the "Pinetum," and it is to be hoped he has profited by the strictures freely given by various reviewers in the past,—and will give us a book for the times.

PRACTICAL FLORICULTURE.—By Peter Henderson, Orange Judd & Co. New edition.—Every effort to increase the knowledge and the taste for the culture of flowers in this country, is very welcome to the horticulturist. Five years ago Mr. Henderson issued this little book,—and the fact that a new edition is now called for is one of the best testimonials to its worth. The edition, being stereotyped, of course renders the new one similar,—the new parts being additional chapters. The scope of the work has been extended in this way; and it now embraces a short treatise on the growth of grapes under glass, contributed by Hugh Wilson, of Salem, Mass., one of the best grape culturists in the Union.

HISTORY OF NORTH AMERICAN BIRDS.—Little, Brown & Co. announce that they have engaged Spencer Baird and Thomas Brewer to write a history of North American Birds. It is to be complete in three volumes. It will contain portraits of 593 land-birds. Vol. one and two are now ready. The water-birds will follow. This will be good news to all lovers of rural life.

THE POPULAR SCIENCE REVIEW, of Messrs. Appleton, under the intelligent management of Prof. Yeomans, maintains a high character. It

is as its name imports, devoted to popular science. Under its guidance we made quite a interesting trip to Mars and to Jupiter during the last year, and expect soon to know enough about these distant worlds to be able to say whether they carry on gardening or not. But really it is wonderful how much is being learned about these things.

NEW AND RARE FRUITS.

SEEDLING PEARS, *from B. S. Fox, San Jose, California.*—We received in the fall of the year a box of Seedling Pears from Mr. Fox, raised in California, and have made notes and drawings of each one as it ripened. As they are numbered, and not yet named, it would do no good to describe them, and we can only say in brief, that not even Van Mons, or any of those who have been famous as raisers of Seedling Pears, could have better success. We cannot say that any of them are better than others already out, but if we were to select a dozen of our popular named kinds, and a dozen of these seedlings, we believe the seedlings would take the premium. This we call excellent success, and Mr. Fox deserves the praise of all pomologists for the time and perseverence displayed in this enterprise. They are of different degrees of ripening, the last kind being in eating condition to-day, February 20th.

PILOT APPLE.—Will some of our Southern friends tell us about this new fruit—size, color, quality and keeping, bearing, habit of the tree, and color of the shoots? A slight notice of it appeared in one of the magazines some years ago, but nothing since; and it is not in either Downing or Warder.

THE ENNES PEAR.—*Mr. W. M. Samuels, of Clinton, Kentucky*, highly praises, and thus describes this in *Prairie Farmer:* "The tree is rather spreading, and the most rapid and stocky grower of fifty varieties that I am cultivating, or that I have ever seen for a pear. It has borne every season since it commenced to bear, and is usually very prolific. Fruit is large, or a little smaller than the Bartlett; bell-shaped with a rather long neck; stem long, slightly curved, slender; calyx open, with rather long projecting segments in a shallow basin; skin smooth, yellow when ripe; flesh white, coarse grained, very juicy and pleasant; and what principally recommends it, and makes it bring such high prices in market is, that it is the earliest large pear. It usually ripens about the 1st of July. One year I shipped on the 20th of June. Some other trees are grown in this vicinity, but I have found none only in this immediate locality."

Since the above was in type, Mr. Wier in *Prairie Farmer* says, he has had the opportunity of seeing the fruit, and that the Ennes is but the Windsor or Belle of Philadelphia.

BALDWIN'S LATE PEACH, an American variety, is popular in England for its keeping qualities. In an ordinary fruit room, it keeps in eating condition till December.

STARK APPLE.—*Mr. E. Manning, of Harrisburg, Ohio*, finds this to be a healthy and good grower, and a better bearer than Ben Davis. Keeps there to nearly the middle of May. At this writing (February 9th), is in capital condition. It bears shipping, he judges, very well, and is of good second quality. Generally bears every year, except when it has been overloaded the previous year. It should be gathered ten days earlier than most other late varieties.

THE MARY PEAR.—Among all of the early ripening pears, say middle to last of July, the Mary, which originated on the Case Nursery grounds, from seed sown by Christopher Wiegoll, the manager, is one of the most vigorous in growth, very productive and an early bearer, whether on pear or quince stock. It is of small to medium size, depending much on soil—a rich, strong clay gives size, but on sandy loam, it is larger than Doyenne d'ete, and ripens earlier. It is uniform in size, and invariably with a bright red cheek. In quality, it is according to pomological rules, "very good." One of the most extensive and celebrated pear growers near Philadelphia, Pa., some years since, ordered a hundred trees at our suggestion, and says it pays so well, that he shall plant largely of it.—*Cleveland Herald.*

NEW AND RARE PLANTS.

VARIEGATED ICE PLANT.—Under the classic name of Mesembryanthemum cordifolium variegatum, our English friends have got out a very beautiful plant. Mr. Chitty, of the Bellevue Nurseries, exhibited the only one then existing in this country at that time, at the Pennsylvania Horticultural Society. As noted in the *Gardener's Monthly*, some petty thief stole a piece of it,

NEW AZALEAS.—*L., Van Houtte*, advertises in the English papers a large number of new kinds. The great improvement that has been made in Azaleas the past few years, makes it probable there are some good ones among all this number.

QUERCUS LIBANI.—A new hardy Oak from

enamored by its beauty, we suppose, but not the less a contemptible act, and one very rare at Philadelphia exhibitions. The leaves have the waxy texture of the Ice plant family, but are beautifully edged with white. The *American Agriculturist* recently figured Mr. Chitty's plant, and we are indebted to their kindness for the use of it here.

Asia Minor has been introduced to France a few years since. The leaves very much resemble our Chestnut Oaks, Quercus Prinus, and the fruit seems to indicate that it belongs to that section. The acorns are nearly as large as those of our Quercus macrocarpa, and the bur covering about half the nut, has numerous rows of small scales.

HORTICULTURAL NOTICES.

CENTENNIAL EXPOSITION, 1876.

Report of the Committee of the Centennial Horticultural Society on Horticultural Buildings for the International Exhibition of 1876.

TO J. E. MITCHELL, *Chairman Executive Committee:*

The Committee of the Centennial Horticultural Society, to whom was referred the subject of "Horticultural Buildings" for the International Exhibition of 1876, beg leave to report:

A GRAND CONSERVATORY.

The Committee are of opinion that it is desirable to erect one large building, as a general Conservatory for the display of Plants, and especially Palms, and other large tropical and half-hardy ornamental trees; and that this building should be so constructed as to be suitable for National Exhibitions of Fruits, Plants, and Flowers.

This general Conservatory should be fitted up with Fountains, Rockwork, Aquariums, Hanging Baskets, Fern Cases, Vases with growing plants, Garden Statuary, contrivances to illustrate Window Gardening, and other objects of horticultural interest.

It is admitted by all persons familiar with the management of delicate plants under glass, that the plants required for decorating a grand Conservatory on public occasions, cannot be kept for any great length of time in such a Conservatory, especially if visited by a large number of persons daily, as it is necessary to the health of such plants that a very warm, moist atmosphere should be maintained day and night, which could not be done with economy in a very large lofty hall, especially in the colder months of the year, with large doors being constantly opened by visitors.

PRACTICAL GREENHOUSE.

In this view of the matter, this Committee recommend, in addition to the Conservatory, the erection of a practical working greenhouse, on an extended scale, for keeping plants in a healthful condition when not required for exhibition purposes.

The question now arises, what shall be the form, size, and general character of the buildings recommended.

FORM AND SIZE OF THE BUILDINGS.

The plan decided upon by this Committee, as the most desirable for the large Conservatory and Greenhouse, may be described as follows:

1. A Conservatory, to be constructed with a truss roof, covered with galvanized iron, or some other opaque substance, the sides to be chiefly glass. It is thought that top lights render the interior of such buildings more cheerful, while they may be so managed as not to detract from the architectural effect. It is believed that a house so constructed will supply light enough to keep delicate plants in a state of health for many days, and half-hardy plants and trees for months, and even years.

2. A lean-to Greenhouse, with glass roof, attached to the sides of the main building, of such extent as may be required, in which to grow and keep delicate ornamental plants. The glass roof of this Greenhouse to be curvilinear in form, and the house altogether ornamental in design and finish.

3. The chief Conservatory, it is thought, should be about 75 feet wide, 240 to 300 feet long, and about 60 to 75 feet high to the centre of the arch. The Greenhouse should be about 30 feet wide and 10 to 30 feet high, and should extend the whole length of the main building on both sides, and probably nearly across the ends, leaving spacious entrances at each end of the building, and one or more entrances on the sides, which may be treated by the architects in an ornamental manner.

4. The sides of the large Conservatory should be composed mostly of glass (with supporting columns of brick or iron), so as to exhibit to visitors in the main hall the contents of the greenhouse, and to admit sunlight to the plants.

5. The ends of the Conservatory may be ornamented with towers, or other architectural designs, while the side entrances may also be so constructed and ornamented as to add to the architectural effect of the entire building.

6. The Conservatory and Greenhouse should be adjoining each other, so that the whole may be heated when required, at comparatively small expense; and to facilitate the removal of plants from the greenhouse to the conservatory, and back again, at all times, as the necessities of the case may require, without exposure to cold winds, or other injurious influences.

COLD GRAPERY.

In addition to the main Conservatory and Greenhouse, as above described, this Committee recommend the erection of a span-roofed house, about 30 to 40 feet wide, and 100 feet long, to be used as a Grapery to exhibit the art of growing foreign grapes under glass; and also to show some new varieties of such grapes, suited to general cultivation in this way, which are not generally known. Of this kind may be named the Royal Ascot, which is more hardy and prolific than the Black Hamburgh. The vines may be got into condition to be fruited in 1876, if planted in boxes, say 18 inches square, in the spring of 1874, and grown under favorable circumstances under glass for two years.

HARDY FRUITS UNDER GLASS.

As it will be almost impossible, for a variety of reasons, to make much of a local display in 1876 of *growing* fruits of any kind, except Strawberries; and since fruit culture in the older States has suffered so much from climatic changes, insects, blight, frost, fungus, drouth, &c., &c., the culture of apricots, nectarines, plums, and even peaches and pears, under glass, has become an object of as much interest to gentlemen of means, as that of the foreign grape; therefore, in the opinion of this Committee, an orchard house, so called, for growing the fruits above enumerated, and some others, would be a very useful and attractive addition to the Horticultural Garden. The methods of culture and pruning required in the orchard house are but little known in America, but we have in and near Philadelphia, and in other parts of the country, many persons who have had practical experience in this art. To make a good display of this kind of fruit culture, a house would be needed about 30 or 40 feet wide, and about 150 feet long. If the house could be ready in the spring of 1875, it could be fruited in 1876 The orders for trees should be issued early in the spring of 1874, and they could be grown and pruned in various nurseries.

VICTORIA REGIA HOUSE.

Many horticulturists desire to have a house for that magnificent plant, the Victoria Regia, and other aquatic plants; and some of our citizens have made liberal offers of money to aid in the construction and support of such a house. If this desire can be gratified, the Centennial Horticultural Society will no doubt ascertain and report further facts on this subject.

PERMANENT HORTICULTURAL GARDEN.

It is the desire of horticulturists generally, that the buildings erected for this department of the great Exposition should be creditable to the taste and skill of our people; and it is the hope of the Pennsylvania horticulturists especially that these buildings may become the basis of a permanent horticultural garden for Fairmount Park, just as Memorial Hall will be a permanent depository of national relics. It is of course expected and intended by these remarks that the buildings which we have recommended shall be erected by the City and State authorities, in the same way that Memorial Hall will be, and after the great exhibition is over they shall be the property of the City and State.

In conclusion, the Committee advise the immediate construction of the grand Conservatory and other houses, as above described, so that the work of collecting and growing plants may be commenced at once, and we may learn how best to use and decorate these houses. It is believed that as soon as the houses are ready, numerous donations of rare plants will be made from private collections and commercial nurseries, as some large Palms have already been offered, and that a large number of choice plants may be obtained from the Botanic and Experimental Gardens at Washington; and if the work of building the Conservatory shall devolve upon the City, it would be desirable to have these houses ready as soon as possible, in order to have something beautiful to show to visitors during the next two years, as evidence that we are in earnest, and doing our work well. The decoration of the grounds devoted to the Horticultural Department of the great Exhibition will form the subject of a report by another Committee.

At the Paris Exposition, the gardening department formed one of its chief attractions. Our horticultural resources are undoubtedly ample, if properly employed, to make this feature of the Centennial Exposition more interesting and instructive to the mass of visitors than any other.

Approved by

P. BARRY, PRESIDENT.

JAMES RITCHIE, Chairman.
HUGH GRAHAM,
MARSHALL P. WILDER,
S. B. PARSONS,
J. S. HOUGHTON.

PHILADELPHIA, *Feb.* 20, 1874.

The Gardener's Monthly,

DEVOTED TO

Horticulture, Arboriculture, Botany and Rural Affairs.

EDITED BY THOMAS MEEHAN.

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HINTS FOR APRIL.

FLOWER GARDEN AND PLEASURE GROUND.

In noting, recently, some silver leaved plants useful for bordering, omission was made of the Glaucium corniculatum which we saw last year in successful use at Mr. Shaw's garden at St. Louis. It is a much larger plant than the Centaurias in common use, but the leaves are quite as prettily lobed and cut. It is very useful for the interior work of masses. The flowers are yellow, something similar to the well-known Escholtzia and Argemone, belonging, indeed, to the same family. In the Rocky Mountains are numerous silvery leaved plants, belonging to the genus Oxytropis, which will come into excellent use for this work some day. One of these, O. Lambertii, is very pretty in its flowers as well as in its silvery leaves; but they have not come into cultivation to any extent yet. Succulents are also much in use for bedding purposes. The bronze and pulverulent leaved Echeverias are especially sought after; and old Aloes and Mesembryanthemums, which for a hundred years or more were kept on dry shelves in out-of-the-way places in greenhouses, and have lived through only because they could not be killed, are now among the most popular of bedding plants; and truly in dense masses they have a very marked and agreeable effect in certain styles of gardening.

Many put out their bulbs of Tuberoses, Tigridias, and Gladiolus too soon. In the Middle States the end of April is time enough. Tuberoses which flowered last year are no use this; but if the offsets are separated, and set in rich warm earth, they will make bulbs for flowering next year. Oftentimes Tuberose bulbs, apparently good, will fail to flower. This often comes from too early planting, in which case the tender heart which contains the embryonic flowers are destroyed by cold or damp. Often a cold damp place for winter keeping, will produce the same result. Those who have experience can tell by the feel of the point of the bulb at planting time, whether this misfortune has befallen the bulb or not. When the heart is injured, the point does not feel as sharp or as solid as the perfect ones. Lily roots are best planted in the fall; but where they have been kept dry, should go in as soon as possible. The mature scales of dry bulbs, taken from the main roots and set out by themselves, will make young plants. This is the best method of increase. Where one does not care to injure the bulbs for this purpose, they may be set rather deeper than usual—say six inches, and bulbs will generally form up the part of the stem which is under ground. The Lilies and Gladiolus are liable to the attacks of a species of fungus, which *rusts* the leaves, and in some cases will utterly destroy the Lily, and much weaken the Gladiolus. It may be the same which destroys the Hollyhock as noticed in our last. Perhaps some application of sulphur will check it. It spreads to healthy plants when it once appears. Now most Gladiolus growers watch for the first appearance of disease, and dig up and throw away the affected parts. Caladium roots are often also put out too soon. The commonest kind—the C. esculentum, is, however, hardier than others, and does not suffer so.

April is a good planting month. There is not much art in planting trees, though it is often much of a mystery. Not to let the roots

dry for an instant between taking up and planting, everybody knows, but everybody don't do it; in fact, everybody deceives himself. We have seen this distinguished individual leave the tops of trees exposed to the sun, with a mat or straw thrown over the roots; and think all was right,—or heel in for a day or two, by just throwing a little dirt over the roots. This is a little good; but everybody's fault is, that although this may be ten minutes of good, he expects to get ten hours, or even ten day's value out of it, and thus he suffers more than if he had done nothing, because he forgets that the branches evaporate moisture from the roots in a dry wind, and the juices go from the roots through the branches, very nearly as well as directly to the air from the roots themselves. So with heeling in. The soil is thrown in lightly, or at most just "kicked" down. "It is only temporary," very few of the roots come in contact with the soil. They can draw in no moisture to supply the waste of evaporation, and thus they stay day after day,—everybody satisfied because he sees the roots covered, really worse than if they had been exposed. We have no doubt that *more trees are lost from imperfect heeling in* than from any other cause whatever. Of course, if the tops be covered as well as the roots, there is less waist of moisture and more chance of success.

This hint will help us in planting. That is, *pound* the soil in well about the fibres, so that they may be in close contact with it; or they cannot draw in the necessary moisture. Should the trees appear a little dry, or the roots badly mutilated in digging, or have few fibres, cut away the plant according to the severity of the injury. It is scarcely necessary to repeat that for this evaporation reason, it is best to plant trees when the ground is rather dry, because it then powders best in pounding, and gets well in about the roots. Wet ground *plasters*, and leaves large hollows in which roots cannot work.

It is best to prune all trees a little at transplanting. It makes a vigorous growth follow, and with vigorous growth comes vigorous new roots. And speaking of pruning reminds us that in cutting off large limbs, which is sometimes necessary, few of even good workmen, know how to do it. In our volume for 1868 we gave a cut to show how it should and should not be done. As we see everywhere about us the same want of knowledge, it will serve a good purpose to reproduce what we there said about this.

The following represents the usual appearance of a cut off branch, caused by cutting on one side, and the weight of the branch drawing over

Fig. 1.

and splitting down the bark. A good workman cuts a little on one side first. When it falls over it then comes off with a clear smooth surface.

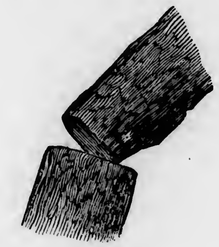


Fig. 2.

After large branches are cut off, the wood should be painted or tarred to keep the wounds from decaying until the bark grows over. Very small branches do not need this, as they cover themselves long before decay seriously commences.

FRUIT GARDEN.

The apple is our standard fruit, and may always be relied on with reasonable care. The first care is good food. Some talk about too rich soil. We never saw the soil too rich for the apple. Where any trouble arises in apple culture, it will be safe to attribute it to other causes than rich soil. Roots are often forced by peculiar modes of culture to send their roots down deep into the ground for food, from injury by modes of surface working, which injure the surface roots. The soil in these deep rooting instances may be rich, but the want of proper atmospheric influence, prevents the proper "cooking" of the food, and then we have what is known as unripe wood. Some writers tell us

that in these rich soils we can cure the evil by putting the trees "in grass." This simply means that the fibrous roots can then be near the surface undisturbed, where they ought always to be. We have no objection to trees growing in grass, but it will lead to misfortune if people do it because they think the soil is too rich. No matter how rich the soil may be for an apple orchard, if it is put in grass, always top dress when you have the chance to do it cheaply. It does not require expensive manures to top dress an apple orchard. Even ditch cleanings make trees grow beautifully when spread under trees, the roots of which are near the surface. Kitchen ashes make an excellent top dressing for apple trees when put close under the trees as far, or nearly, as the roots extend. Where there is grass to mow, ashes interfere with the edge of the scythe. Apple trees are often starved in other ways than by neglect to manure. The apple borer leads to starvation oftener than poor soil. The supply of food is cut off by every move the borer makes. They work at the surface of the ground. Look for them now. If you have no time, set the boys and girls to work. Say they shall have no apples for Christmas or birth-day presents if they do not. However, get the borers out somehow, if even by wire and jack knife. If not soon done they will soon get out themselves, and give you more trouble in the future. After they have left, whether by your invitation or otherwise, keep them out; even though you have to lock the door after the horse is stolen. Paper put on in May, and then gas-tarred, will keep them out; some say it will not, but it will. There is no doubt about it. One papering will last three years. The weakening of the tree by the borer is why the fruit drops off in so many cases, and is small and scrubby in others. With these cases attended to, there will be little left to worry one but the codling moth.

In grape raising people seem to go to extremes in management. A few years ago the poor plant was in leading strings. It dared not make one free growth, but it was pinched and twisted into all sorts of ways. Now the "prune not at all" maxims are getting headway, and this is as bad, if not worse. First grape growing was such a mystery, it took a life-time to study it, and the "old vigneron" was an awfully sublime sort of a personage. He is now among the unfrocked and unreverenced. But there is great art in good grape treatment; and yet this art is founded on a few very simple principles. For instance, leaves are necessary to healthy growth; but two leaves three inches wide are not of equal value to one leaf of six inches. To get these strong leaves, see that the number of sprouts be limited. If two buds push from one eye, pinch out the weakest whenever it appears. The other will be strengthened by this protective policy, and the laws of trade result in favor of larger and better leaves on the leaf that follows. Allow no one shoot to grow stronger than another. If there are indications of this, pinch off its top. While it stops to wonder what you mean by this summary conduct, the weaker fellows will profit to take what properly belongs to them. There is little more science in summer pruning than this; but it takes some experience, joined with common sense, to apply it. This, indeed, is where true art comes in.

VEGETABLE GARDEN.

Few things mark a well-kept garden better than an abundance of all kinds of herbs. Now is the time to make the beds. Sage, Thyme and Lavender grow from slips, which may be set in now precisely as if an edging of box were to be made of them. They grow very easily. Basil and Sweet Marjoram must be sown in a rich warm border.

South of Philadelphia, the more tender kinds of garden vegetables may now be sown—beans, corn, cucumbers, squashes, etc.—that it is not prudent to plant in this latitude before the first of May; and tomato, egg-plants, etc., may also be set out in those favored places. Cucumbers, squashes, and such vegetables can be got forward as well as tomatoes, egg-plants, etc., by being sown in a frame or hot-bed, and potted off into three-inch pots. They will be nice plants by the first week in May. Rotten wood suits cucumbers and the squash tribe exceedingly well as a manure. Tomatoes and egg-plants that are desired very early are best potted, soon after they come up, into small pots. They can then be turned out into the open air without any check to their roots. Of course, they should be gradually inured to the open air—not suddenly transferred from a warm and moist air to a very dry one.

Early York Cabbage for early use should be set out early in this month. It is an excellent plan to make the holes with a dibble first, where the cabbage is to be set; then fill up the holes

with manure-water; and after the water has soaked away, set in the plants. It is rather more laborious than the old way, but the cabbage grows so fast afterwards that it pays pretty well.

It is not a good plan to cut all the asparagus as soon as they appear. A few sprouts should always be left to grow from each, to strengthen the plants.

Celery, with most families, is an important crop, and should be sown about this period. A very rich moist spot, that will be shaded from the mid-day April sun, should be chosen; or a box in a frame by those who have the convenience

Salsafy and Scorzonera like a damp rich soil.

Bean-poles may be planted preparatory to sowing the Lima bean in May. Where bean-poles are scarce, two or three hoop-poles, set into the ground one from each other, and tied together at the top, make as good a pole, and perhaps better.

Dwarf beans should have very warm and deep soil—sow them only two inches apart. The Valentine is yet the best early, take it all in all.

Peas should be sown every two weeks for a succession—do not make the soil very rich for them.

Lettuce, for a second crop of salad, should be sown about the end of the month. The Drumhead cabbage is usually sown for a summer crop; but the old kinds of Cos lettuce would, no doubt, be found very valuable in rich soils.

COMMUNICATIONS.

GROWING CELERY.

BY J. W. S., WEST PHILADELPHIA, PENNA.

B., Brooklyn, N. Y., asks how to grow good Celery. The editor attempts to answer, but does not do it satisfactorily to my mind. First discard all kinds that have a tendency to grow like poplar trees, and sow the Boston Market, or any other of the *dwarf* kinds. The next essential point is to see that the plants never become stunted in their growth. In order to do this successfully, when you plant them in the trenches, lift each plant with a trowel, so that you will get all the young roots; when planted give a thorough watering. During the hot months of July and August keep the plants growing by stirring the "surface" earth between and around the plants, and by giving a thorough watering occasionally; but never allow the surface to become baked. Never attempt to stimulate the plants during the hot months; but about the first of September give them a watering with Guano water. Add Guano until the water is the color of weak beer, and continue this weekly till the plants are strong, vigorous and healthy, and you are compelled to earth them up.

Never earth up weak plants. I grow a large quantity every year, and I was reluctant to give up the tall growing kinds; but after a fair trial of the dwarf kinds, they gave me perfect satisfaction, being solid, crisp and sweet. I find Boston Market first rate.

AMERICAN HOMES.

BY GEN. W. S. NOBLE, BRIDGEPORT, CONN.

In your last March number (1873), a lecturer's opinion about ornamental planting was epitomized under the heading

"FOREIGN TREES TO BE PREFERRED."

At this late day, I shall not criticise that sentiment by specific comparisons with our own. I shall, however, make that heading a text, and point of departure, for a few words about rural adornment.

The preference is unpatriotic. But this we could bear if it was not such rank and patent injustice to the admirable native trees of America. While we should not exalt these at the expense of the foreigner, our own should not bear the undeserved slight of such wholesale preference. Why thus neglect and ignore, for nursery trees, the grand and lovely abundance of our native woodland? The habilaments which God has made our sylvan garb, ought to be good enough for the shelter and ornament of our homes.

I stop for no comparisons or contrasts. Our woodland vesture needs no specific eulogy. It is the fitting garniture of our sylvan scenes. No *Yank* should refuse to these companions of his childhood their deserved place. He who does, either has not studied their merit, or like others, his telescopic wisdom sees merit only in far off things, and little heeds their betters at his door. But after all, ornamental planting depends for

pleasing effect, more on the way we use the situation and our material, than on the nativity of the things we plant.

Both in landscape and home adornment two grave mistakes are made. First, we neglect the trees and shrubs growing either on or close by our ground, but eagerly seek and welcome those from afar. Second, we deem it a kind of axiom that rural adornment means big work by barrow and shovel, with rock-blast and the axe.

The result is, that the most picturesque and piquant rural expressions are made insipid, or ruined, by a very costly and destructive reconstruction; the very choicest opportunities are unheeded; the worry and toil after something very fine, because the pattern of our lay-out, or what we plant, comes from afar; while right before our eyes is every requisite of situation and material for the most tasteful work.

Now the Yank takes but little stock in such heedless and unthrifty doings. They are to his eye all fuss, flummery and waste. Although the method of a less costly and pretentious routine is not quite plain to him; yet the simplicity and thrift of a closer walk with nature is quite clear. The sooner, therefore, we rid ourselves of this partiality for foreign trees, the reliance on nursery trees, and on a costly revamping of the situation, the quicker our intuitive countrymen will engraft on their home life a wise and thrifty taste.

The sound sense of simple methods and means in rural embellishment, is vindicated and made plain in three signal examples in this vicinity. In only one of them was a tree, shrub or flower used, which was not the product of its soil. Yet they have won the admiration of all tasteful men, not more from their excellence than that such happy effects resulted from opportunities and means so simple and meagre. What was done, and what each locality furnished therefore, I shall briefly record.

A few years since, a gentleman of taste and culture, an artist or actor, took in hand some ten acres of rude, rock abounding, undulating land, overlooking Long Island Sound. Its groups of shrubs and stunted trees, its cedar clad rocky knolls and prominences, looked down upon intervals of old pasture land, sloping therefrom. He put thereon no foreign tree or shrub. Those native to that manor, or a few very common flowering bushes, some stunted wild cherries, and a low growing oak or two, were, besides the Red Cedars of New England, its sole drapery. But those cedars monopolized its surface, and gave character to the property. These he culled and moulded into groups of richest woodland bronze, feathering up from the sward into spires and crowns above each rocky knoll and rise. The old pasture land he fashioned into a lawn, whose lighter shade of green swept up to and blended with the dark verdure of those cedars There was here no great outlay of work or money. Not by discarding, but in unison with the character and apparel of the rude original, its picturesque aspect, polished and refined, was transferred to its new estate of a home.

The attractiveness thus given to this property, won for it a purchaser at a round figure. But the ability to buy and admire was not mated with the sense to let alone that well enough which had captured his money. So now, the chaste simplicity which he bought, is smothered beneath an infant forest of trees, both home bred and foreign.

The successful improvement by the original owner, and the abortive blundering of his successor, reveal the true methods, both of doing and spoiling this work of rural improvement.

At Fairfield, Connecticut, that very cultured gentleman, Rev. Dr. Samuel Osgood, many years since, bought some seven acres of rocky hills, swamp, woods, and cedar thickets. Its make up was an epitome of almost every variety of New England country. But the Doctor saw among its rudeness and wild tangle the makings of a lovely home. All its old landmarks and belongings were cherished to blend with the new,—of its walks and drive, and home appointments. Every feature of the perfect and condensed naturalness of the original was brought out and given expression. Each in turn was passed in review by tasteful vistas and graceful approach. No heavy work in earth or rock, or by the ruthless axe was done. The woodman spared the trees. The ragged cedar thickets,—the tangled wood,—the big boulders and jutting rocks still live as features of the scene. Amidst the salient naturalness which greet you on every hand, were planted a few foreign trees and shrubs, and some Americans not native to the ground. Yet not these, but the old belongings, gave character to the property, and were its charm.

So wisely and deftly has the reverend gentleman ordered his improvements,—so genially does the new harmonize with the old in these sylvan shades,—that in the lovely impress of the whole, in the fitting of a graceful home to the

old estate of things, in the fragrance of its flowers and its woodland odors, the stranger bears away one of the memories which "are a joy forever."

This rural work is a shining example of the submission of art to a fellowship with nature. A situation of rude and abundant naturalness has its quiet repose and rural charms, opened up to sunshine, and by pathways, and made a home.

VICTORIA, AUSTRALIA.
RECOLLECTIONS OF MELBOURNE, ST. KILDA AND GEELONG.

BY W. T. HARDING, AGRICULTURAL COLLEGE, COLUMBUS, OHIO.

The great sun-God had risen to give light and life to the world, while beneath the powerful glare of his beams, we paced the deck of the "Cleopatra," to meditate the blue profound below, and take a last fond look of the land we left behind us. The Blue Mountains, which traverse the Continent from north to south, were gradually receding from view, "like fairy gifts fading away," as our noble vessel steamed onward, along the tree-girt shore. As we steer close to Pinch Gut Island, I could plainly discern some fine specimens of Pandanus, or screw pines, with numbers of the anomalous Mangrove trees, Rhizophora Mangle, whose eccentric forms of growth seemed to astonish and amuse the passengers, with their grotesque appearance. Closely we hugged the shore of the beautiful Illawarra, a narrow strip of land lying between the mountains and the sea, noted for the fertility of its soil, and renowned for its arboreal grandeur. Perhaps, there is not a more favored spot in Australia, where the elegant Palm, and the feathery Fern, grow so luxuriantly. Some magnificent Araucarias stood out in bold relief, perfect in form, and of noble port. Many of the finest tree Ferns which grace the European Conservatories, were once flourishing there.

There, also, may be seen some of the grandest specimens of natural rock-work, reared by the Great Architect, so marvelously beautiful, picturesque and primitive,—over which, from the many fissures, trickles the pearly springs, which form the most romantic cascades that ever mingled with mosses in a fern-covered glen. But, adieu, beautiful Illawarra, with all thy charming scenes and floral gems, I shall never brush the dew from thy green grass again!

The mighty waves of the Pacific heavily dash and break against the perpendicular cliffs which tower up from the sea, as we near Cape How. Wilson's Promontory is ahead, and as the vessel is logging thirteen knots an hour, we soon after enter Bass's Straits. The captain calls our attention to the huge and singularly-shaped pillars, which seem to stand directly in the ship's track, which the coasters significantly term, "Bass's Dippers." When first seen at a distance, they *appear* to dip beneath the surface, though in *reality* they do not, but momentarily disappear, as each successive wave submerges them. One in particular, is very remarkable, having an enormous hole in the centre, through which the waves gurgle and foam furiously. They are probably the remains of the connecting chain of rocks, which at some remote geological age, united the main land of Australia with Tasmania. Flinder's Island is in sight, noted for its guano deposits and Sandrac trees, Frenula verrucosa, a useful timber tree, and the no less valuable Lightwood, Acacia melanoxylon. It is considered superior to many other kinds for making furniture and boat building. Sailing onwards, we round the Promontory, and pass along the coast of Gipp's Land, a celebrated agricultural district, where "all the farmers get rich." Like the happy Land of Canaan, it is said, literally, "to overflow with milk and honey." Many and marvelous were the accounts we heard of its productiveness, and personally saw some of the most extraordinary growth of culinary vegetables I ever beheld. Those famous South American esculents, known to the learned and scientific botanists as Solanum tuberosum, and recognized by ordinary mortals and plain folks generally as potatoes, grow in enormous quantities, of good quality and prodigious size. The largest tubers I ever saw produced, more than double the size of the biggest grown elsewhere, were raised there.

The universal root I allude to, has, or ought to have, immortalized the gallant knight, Sir Walter Raleigh, as a benefactor to his species, for having introduced it into Europe. Poor Sir Walter, he was in every sense "a soldier, a scholar, and a gentleman." Tinged with the romance of the times, chivalric, brave and true, how sad to think that so useful a life as his, should so cruelly end with the headsman's axe, in a bloody drama! Surely it was not from such murderous acts, that "the Lord's anointed," was called "a gracious Sovereign." I have often thought that the "divinity that doth hedge about a king," had not hedged very closely about James, that fickle-minded scamp, who, from 1603 to 1625, was, by "the grace of God," a king.

In Gipp's Land, more recently, gold and extensive coal beds have been discovered, and which will add a substantial mineral wealth to that highly favored section.

As I make no pretentions to a knowledge of seamanship, and am but little skilled in nautical phrases, and not having either "the Shipwreck," "the Ancient Mariner," "the Pilot," or "Poor Jack," to quote from, will I not attempt with "*sea lingo*," to say how the ship was handled. My *forte* is simply Horticulture. In that time-honored profession I have labored long. Time-honored it is admitted to be, beginning "in the days when the earth was young," when Gardener Adam was in his prime, happy among his fruit and flowers. Still following the line of my calling, as he did, with this difference; he found a garden complete in all its appointments, while I, a weak, but nevertheless, an enthusiastic imitator, have endeavored to make one. I confess it is pleasant at times, to turn back the leaves in the calendar of life, and re-peruse the musty pages. The records seem strangely blended, but on the whole, the chronicles are more felicitous than otherwise. With all the admitted progress made in "the art and science of gardening," there is much to accomplish still by the modern practitioners.

What a cheery and honest ring there seems in Shakspeare's words, where he says, "Come, my spade." "There is no more ancient gentlemen than gardeners. * * * * They hold up Adam's profession." If it is not *a profitable business*, it is nevertheless a *pleasant one*, and an *honest one*, and with truth may be said to be more *ancient* than the Golden Fleece or the Roman Eagle, and *more honorable* than the Star or Garter, *or any other earthly profession in existence.*

Pardon me, Mr. Editor, and forgive me, good readers, for "I've been roving, I've been roving" from the subject. In the meantime, the engines have stopped to take the pilot on board. We are off Queen's Cliff Station. Wind and tide favoring, we soon enter through an opening of about two miles wide, between Port Philip Heads. Hobson's Bay, like an inland sea, covering an area of 875 miles, lay before us, where we drop anchor among the numerous crafts, from which float the colors of almost every maritime nation under the sun.

"The Diggings" seemed to be the Pilgrim's Mecca, to which thousands of votaries were eagerly hastening to worship. From the Temple of Mammon, in California, the golden oracles had echoed and re-echoed in distant Australia, "Thou shalt have none other gods but me." Poor, pitiful creatures, I felt sorry for them; while they, believing their orisons had been heard, were on the eve of realizing their golden dreams. In some instances a few did; while to the many the glittering glamour was as illusive as the ignis fatuus, or will-o'-the-wisp. Then, if ever, was the age of gold, if not "the Golden Age." It was visible and tangible everywhere; and however paradoxical it may now seem, few, if any, gave "measure for measure" by "the Golden Rule."

Melbourne, the capital of Victoria, where your humble correspondent in due time arrived, was in the wildest confusion and excitement. The "gold fever" was at its height. The contagion had spread everywhere. The auriferous epidemic spared none—the rich, the poor, the base, the brave, were all alike attacked in some degree. O, modern Pandemonium of the nineteenth century, and that Melbourne should witness the evil, where but a short time previous it was known as a quiet and steady going place! Besides the "Golden Image," they had set up another to "Bacchus," whose orgies were more disgusting still. Well might it be said, that vice, like a torrent, rolled through its streets. Gladly I left "the flaunting town" for more pastoral and quiet scenes.

I accepted an invitation to visit St. Kilda, the home of Mr. May, a nurseryman, whom I previously met, and mentioned the circumstance in the *Monthly* of 1871. He was an early acquaintance of mine, and his father had been one of my horticultural mentors when a young lad, "in merrie England." Within his vine-covered cottage, in that beautiful suburban village, I met with a hearty and hospitable welcome. Being a man after my own heart, we readily agreed to *explore* the Botanic Gardens, of Dr. Muller fame. It was not the first time I had rambled through those excellent grounds, which presented so many attractions. Happily, they are better kept now than they were at the time of which I write. The same causes which had affected the Sydney Botanic Gardens, had existed here.

As is usual in all scientific establishments of a like nature, the gardens contained a good collection of the native and foreign flora, all of which were correctly named and properly arranged. The Lake, or Aquarium, was better stocked with aquatic plants than any other I ever saw. I could scarcely describe the many species, without naming almost everything whose habitats were watery. But a few must suffice to mention where all were equally interesting, viz.: Victoria regia, a regal plant in every respect; Papyrus antiquorum, P. odoratus, P. laxiflorus, Cyperus luzula, C. strigosus, with several Xyrus, Nelumbiums, Nympheas, Nuphars, Pontederas, Limnocharis, Houttonias, Vallisnerias, Sagittarias, Trapa bicornis the water calthrops of China, etc.

There was also a fine collection of young oaks, the species indigenous to this country especially. The same may be said of herbac ous plants. Most of the trees and shrubs with which the gardens were stocked were small, though thrifty and vigorous. A few others I feel constrained to mention as having a special interest, and not often met with—in fact, all uncommon to Europeans and Americans. For instance, Parkia Globosa, the mitta tree of Africa, and named in honor of the lamented traveler, Mungo Park. Also the African Silver tree, Leucodendron argenteum, a beautiful specimen; Erythrina corallodendron, the handsome coral tree, some twenty feet high; E. crista-galli, of fine arboreal proportions, and upwards of thirty feet high; Fagara pterota, a native of Jamaica, an exceedingly beautiful tree, and then about fifteen feet high. Perhaps the most interesting of all I noticed, was the East Indian Teakwood tree, Tectoria grandis. It appeared to be quite acclimated and thrifty. In India, it is one of the most valuable timber trees grown, so generally useful: there, it frequently attains to upwards of one hundred feet high, and is highly esteemed for its uses in naval architecture, and is the most durable timber used for railway sleepers, etc. Agati grandiflora is a splendid tree of great beauty, a leguminous evergreen, and is a *grandiflora* in every sense: literally, it is a *flaming* tree, if not a *burning* bush. There was also a fair specimen of the remarkable Banyan tree of India, Ficus religiosa, or the sacred tree of the Hindoos. Lastly, another interesting and ornamental tree, Comocladia ilicifolia, a Caribbean native, of peculiar habit. The smooth stems are foliated only on the extreme ends, and appear as if they were tied on in bunches.

It would, indeed, be a pleasant task, if time would only permit, *to write up* the Garden, and state more fully what I saw, and how much I was interested therein. As it is, I can only briefly allude to it. Undoubtedly, it is the beginning of a great end, and which may at some future time be on a par with famous Kew. I have no doubt some of *ye ancient Kewites* will smile at the metaphor (not specially alluding to Mr. Editor), and say, that in any event it could only occur after "Macaulay's New Zealander" had stood on the ruins of fallen London, to meditate on its past greatness and grandeur.

For some reasons, not satisfactorily explained, our happiest experiences of life seem to be of short duration, ere they are varied by a change. "Short and sweet" were the few days I so pleasantly spent with my friends, ere I bade them adieu.

Taking passage on a small steamer which ran from Melbourne to Geelong, we passed down the muddy stream of the Yarra-Yarra to Hobson's Bay and Corio Bay. At the head of the latter stands Geelong. It was then a rather straggling town, while now it is a fine city of considerable importance.

The Ballarat gold fields, some fifty miles beyond, were then "in full blast," and Geelong being a sort of half-way town between the mines and the capital, was in a state of chronic tumult with the miners on the way to and fro to Diggerdom.

Amid all this turmoil and commotion lived the complacent and happy Mr. Marlow, whose quiet deportment and steady equanimity, nothing less than a thunderbolt or earthquake could shake or move from the even tenor of his way. He, sage and solid old gentleman, was contented, healthy, wealthy, and wise. He didn't go to the diggings. The *golden changes*, which sounded so melodious in more sordid ears than his, had no charms for him, although music and the love of song dwelt in him. Good old soul,—yea, two of them. Mrs. Marlow, his helpmate, seemed so like him, and he seemed so like her, who was just such a *rib* as all good men deserve, from the region of the heart. I could hardly call her his "better half," although I believe wives generally are. They seemed so well mated, so evenly matched, so equally good, and though twain, were but one flesh. Truly, "they lived and loved together," believing in God and one another. "They also loved sweet posies, lilies, pinks, and roses," as all such happy

people do. For them to cultivate fruits and flowers was a dual delight, which they duly enjoyed and much prized. They had a garden, a real "garden of delights,"

> "Where lawns extend that scorn Arcadian pride,
> And brighter streams than fam'd Hydaspis glide."

When inquiring for the place, it was intimated that I could not mistake it when I saw the garden: it was impossible. It was even so.

I have often thought since then, if I did not see at Geelong the first example of Sub-Tropical Gardening, at any rate it was the first time I had ever seen such an array of the rich and rare blending together in that character. There was displayed the best of taste and good judgment, fully up to the present style of London and Paris of to-day. Such a galaxy of Australian beauties, with the floral *bon ton* of other lands, made me exclaim, surely, the like before was never seen.

You, Mr. Editor, will recognize the following, namely, of Tree Ferns: Cyathea medularis, C. dealbata, C. Cunninghamii, and C. princeps, Alsophilla Australis, A. excelsa, A. Leichardtiana, Todea australis, Dicksonia squarrosa, D. antarctica, Cibotium Billardrii, Thamnopteris nidus, and T. Australasica, etc., with many of the smaller growing species.

Of Palms and Cycads, I noticed Sabal Adansonii, Cycas revoluta, C. circinalis, Levistonia Borbonica, L. australis, Caryota urens, C. elegans, Euturpe edulis, Phœnix dactylifera, P. humilis, Raphis flabeliformis, Corypha australis, Oreodoxa regia, Chamœdorea glaucifolia, Jubæ spectabilis, Cocos nucifera, C. australis, Chamœrops excelsa, C. elegans, Macrozamia spiralis. There were also several varieties of Bamboos, Zamias, Arundos, Cordylines, Dracinas, Philodendrons, Musas, Ficas, Marantas, Caladiums, Arums, Phormiums, Diffenbachias, Crinums, Yuccas, Cannas, Aralias, Crotons, Saccharums, Acacias, Casuirinas, Araucarias, Hakeas, etc. Of Succulents and their alliances, such as Euphorbias, Rhipsalis, Opuntia, Epiphyllum, Aloes, Agaves, Mammillaria, Echinocactus, Kalosanthes, Crassula, Mesembryanthemums, Sempervivums, Haworthias, Stapelias, Dyckias, Echeveria, Umbilicus, etc. Also Æchmeas, Tillandsias, Bounaparteas, Coccolobas, Fourcroya, etc.

The foreign vegetation herein mentioned, with a choice of indigenous growth, which I have in other communications noticed, will give you an idea of what I have attempted to describe. I think you will pronounce them a fair collection of notables, especially when you consider the time and place. Since the time of which I write, Botanical collectors have explored and ransacked many foreign lands, which had hitherto remained unsearched, and have enriched the Florists and Horticulturists with rare and beautiful additions. There still remains "other fields and pastures new," for the venturesome Botanist to search and gather in. If Dr. Livingstone could only gather as he goes through the wilds of Africa, of the many strange, useful, and beautiful vegetable treasures, what a boon it would be to us, who stay at home at ease.

In conclusion, permit me to say, that I subsequently heard of the death of that good old gentlewoman, Mrs. Marlow, some four years after I left Australia; and in the year following, her husband, "that fine old English gentleman," crossed the boundary line of "the debatable land," and leaving his earthly Eden below, entered the one above.

GREENHOUSE AND POT PLANTS.

BY JOSEPH POLLARD, ESQ.,
Gardener of Hon. Alexander Mitchell, Milwaukee.

Greenhouses of late years have become so popular, since their skilful erection has become better understood, that we find them in most gardens, no matter how small, if the owners make any pretentions to taste or elegance. Some of them are large enough to demand the constant care of an intelligent gardener, but many are under the management of some lady of the household. It is highly gratifying to notice the noble efforts of many highly cultivated ladies, trying to introduce glass structures for the culture of ornamental plants and flowers. Nearly every one now feels that there is no excuse for the want of a conservatory or greenhouse of some kind in close proximity to the dwelling house; and the result is, that they are becoming very fashionable, and are as necessary to a complete house as a parlor or dining room. Their necessity being conceded, the question arises, and is often a very perplexing one, where shall the conservatory be erected and how located? for in this climate we often have trouble trying to keep them warm, making perpetual war against frost in winter, as Jack Frost is the inveterate enemy of a winter garden, and he is only kept at bay by perpetual fire heat during the long winter.

Greenhouses or conservatories should be built, if possible, in a warm, sheltered situation, with

a south aspect. Every crack and crevice should be well closed. By being very careful in this respect; a great saving of fuel is effected, and a better and steadier temperature is maintained, an even temperature being very necessary to the health of the plants. When fire heat is applied, it should be by flues and hot water pipes, and particular care should be taken to run the flues or pipes as near the coldest part of the conservatory or greenhouse as possible. When fire heat is used, it is very necessary to apply the syringe occasionally, in order to keep up a moist atmosphere; for dry fire heat is very injurious to vegetation. On warm, sunny days, with bright sunshine, plants usually dry at the top of the soil first: but it is easily seen when they want water. In severe, cold weather, when strong fire heat is needed, the pots of soil dry from the bottom upwards, and syringing the plants at times moistens the top soil, and leads plant admirers often to think the plants are all right, when, in reality, the plants are actually suffering for the want of water.

The result of such neglect is certain death. The only remedy for all these evils is to be always on the watch, in order to discover the appearance of wilting of the foliage. When this appears, the plants should have a thorough watering that will show through the bottom of the pots. The water used should be as near the temperature of the house as possible. Another great evil, perhaps the greatest, in the whole course of plant culture, is unskilful watering. Horticultural writers often recommend copious watering for many varieties of plants, which advice I know is unskilfully interpreted by many who have not had experience sufficient to guide them. Many evil results follow, and great caution should he taken against overwatering, for that is one of the principal points in successful plant culture. Water cannot be given to greenhouse plants without injury, unless the plant shows the want of it; or, in other words, unless the water previously given to them has been absorbed, for water given to plants that do not require it, will remain stagnant in the pot, souring the soil, and will soon kill the plants. On the other hand, you will kill the plant by letting it get too dry, and neglecting to water it at the proper time.

I will now name a few greenhouse plants which are favorites of mine, beginning with the

CAMELIA JAPONICA.

This is a glorious family of plants, and commands the admiration of all lovers of plants, because of its dark green, glossy foliage and glorious flowers. They are easier of culture than the generality of cultivators imagine. The best soil to pot them in is sandy loam and peat, in the proportions of two parts of sandy loam to one part of peat, with a little leaf mould added. They need syringing three or four times a week, according to the weather, avoiding it when in flower. Keep them in a close, moist place while in a growing condition. If the plant is strong and robust, water sparingly, in order to cause a better bud setting; and when you find they have done this, take particular care that none of them suffer from becoming too dry, as that will cause them to cast their buds and fail of flowering. This noble plant flowers freely in a temperature of fifty degrees, in a moist atmosphere.

AZALEAS.

A beautiful tribe of plants, delighting in a soil of two parts of peat and one of loam, and considerable sand. If the pots they grow in are well drained, and never allowed to become too dry, they will thrive in almost any situation, though they prefer partial shade. I find they do better in a tolerably good exposure to the sun than when too much shaded, as they ripen their wood better, and set more buds and produce larger flowers. But during the summer months, they must be plunged to the rim of the pots in the ground, for, otherwise, their fine, hair-like root fibres will receive great injury from exposure to the sun. There is no hard wooded plant requiring so much water during its growing and flowering season as the *Azalea*.

ACACIAS.

Australian plants; very valuable in greenhouses, blooming from January to April. Soil should be two parts of loam and one part each of sand and peat; flowers yellow and showy. They delight in a low temperature, and like abundance of water when flowering. Should be in every collection. There are many varieties of acacia.

PELARGONIUM,

(erroneously often called Lady Washington geranium). What is more beautiful than a well-grown specimen Pelargonium, loaded with its blaze of gaudy colors? There is no plant in the floral kingdom that pays so well for proper care and good culture as the Pelargonium, and certainly there is no plant that needs more care to grow it well. It is one of the plants we generally

[THE AZALEA.]

find in every collection in a poor, worthless condition, drawn and spindling—in fact sick. I am certain there is no plant in the floral kingdom that gives more satisfaction and pleasure for good culture than the Pelargonium. To propagate this noble plant, I take cuttings as early as possible in June, and put them in six inch pots in a close frame, or if convenient give a little gentle bottom heat. They will be rooted in about a month. I then take them up carefully and pot them in three inch pots, and replace them in the frame until they begin to grow, then admit air, mornings and evenings to harden them. I then pinch off the tops to induce them to make side shoots. When I find the pots well filled with roots, I shift them into six inch pots, giving air night and day, taking care to guard against heavy rains, which they dislike very much. I pay particular attention to them down to the first of September, and then shift them into eight inch pots and replace them in the frame, and let them stand there about two weeks, and then commence to stint them for water, giving them none, unless they show signs of suffering. At the approach of frost I house them, taking care to keep them as near the glass as possible, and give them as much air as possible, and water once a week, during the short days. As the days lengthen, I give them a little more water. By the middle of March, I put them in ten inch pots, giving plenty of water, and as soon as they begin to show bloom, I water them three times a week with liquid manure, until the buds begin to show color, and about the last week in May, nothing can be found more gorgeous. They are a mass of flame. In potting I use about two inches of drainage, and on the top of it I place a little moss. The soil used is equal parts of loam and leaf-mould, and a little sand and well-rotted cow manure.

Judging from experience, I do not think it exalts plant culture, to think that you have only to pot plants in a little loam and manure, or perhaps in any kind of soil, and then leave them to live or die as they please. As far as my experience goes, to grow plants well requires skill and care. If our florists and skilful cultivators would erect landmarks to show us how to avoid disappointments in plant culture, they would advance the interest of both professional and amateur cultivators, for plant growing is certainly a great labor of love.

FUCHSIAS.

Nothing is more beautiful than the Fuchsia. About the middle of February, if you want an early bloom, remove them from the cellar or pit, where they have been in a dormant state. Use the knife freely, and place them in a temperature of forty-five degrees, in the same pots they flowered in the previous summer. Water sparingly until they break leaf buds, then shake out of the pots, and re-pot them in as small pots as possible, being careful not to cramp the roots. When they begin to grow freely, shift into larger pots, and continue shifting as they grow, until you wish them to flower. By cutting freely, you can shape them as you please. By this plan of culture you can have just as stockly and strong plants as you please. Pot in sandy loam and leaf mould, and give abundance of water and light while flowering, avoiding too strong sun heat.

CALLA ETHIOPICA.

The plan I follow in order to secure a successful flowering during the winter months is: In or about the first week in June, bring your callas to rest by exposing them to the full sun, placing them where they are sheltered from rain. Be very careful not to water them. The last week in August, take them out of the pots and shake away all the old soil. Clean the roots of all decayed matter, and particularly all the young shoots or suckers. Pot them in good, strong, rich soil, sandy loam, leaf mould, or very rotten cow manure, exposing them to the full sun as before, in the open air. Water them freely until such time as the season compels you to house them, and when you take them to the greenhouse, put them in a sunny place as near the glass as possible, and they will remain compact. This plant deserves a place in every collection for its large, remarkably white flowers. The pots should be well drained and the plants well watered while in a growing state, as the plant will not flower if once suffered to become too dry. It has the wonderful power of discharging the superabundant water from the points of its leaves in drops. It is also suitable for a water plant. It is a native of the Cape of Good Hope, and is commonly called Calla, but its proper name is Richardia Æthiopica. The least frost will kill it. Their principal elements are air, light and moisture, flowering freely in a temperature of fifty degrees. I wish it to be understood that these practical remarks are not for the professional gardener, but intended as landmarks to teach the young cultivator what to do and how to avoid failure.

SCARLET GERANIUMS.

Nothing is more showy in the flower garden or pleasure grounds during the whole summer and autumn months, than beds or masses of scarlet blooming geranium, of which the old horse shoe geranium is the original type. There are a great number of new and very beautiful sorts, and when they are properly grouped together on the lawn, they make a glorious display. There are few plants more easily grown, or that better repay the care of the cultivator. All the kinds require a light, rich soil, composed of loam, leaf mould or rotten manure and sand. They will root readily without either glass or bottom heat. Gardeners generally take cuttings in autumn months and put them into six inch pots, well drained and filled with sand, and placed in a cold frame. They will be rooted in a month or five weeks, and they should be carefully lifted and placed in three inch pots and taken to the greenhouse, or some sheltered place until they begin to grow. Water occasionally, until such time as the weather compels you to house them. During the winter, they require little water and cool temperature. In March, shift into five inch pots, and when the time comes for bedding, these plants will repay for all labor. As there are many who would be glad to cultivate them who have no greenhouse in which to keep them, I will mention for the benefit of such, a very simple method which I practice occasionally with great success. As soon as the first frost nips the foliage, I take as many geranium plants as I want, and put them into as small pots as possible, and take them to a dry pit or cellar free from frost. Here they remain dry until spring. When my beds are ready, I cut them to four or five eyes of the collar, and, so far from injuring them, I firmly believe they flower much finer after a winter's rest than when kept in a greenhouse.

[We have taken this excellent article from the proceedings of Wisconsin State Horticultural Society, already noticed.—Ed. G. M.]

STEAM AND HOT WATER.

BY W. D. ALLEN, CHICAGO, ILLS.

I readily acknowledge what H. T. Y. says in the *Gardener's Monthly* for October: That care is necessary to keep the required heat, and that a steam boiler requires more constant attention than a hot water boiler, especially if he can leave his boiler for ten hours. I doubt if he can if the thermometer indicates zero ten or fifteen degrees below. Can H. T. Y. leave with safety his boiler for ten hours in this changeable climate?

On the night of the 28th of last November, in the evening the thermometer indicated four degrees above zero, at 1 o'clock, A. M., eighteen below zero. Will a hot water boiler safely carry the plants through such changes for ten hours without attention? It is necessary for me to keep a night watch always on duty. I have thought that when it is absolutely necessary to attend to duties, that the results were better than when otherwise, as I find that hot water florists are not unfrequently found thawing out their water pipes. Such a state of things in my houses would send my plants where the "woodbine twineth." As I said before I am a novice in the business, and have no particular taste for it; but I am still foolish enough to think that there is something in steam heat preferable to other modes of heating, as every thing grows strong and vigorous, and blooms profusely.

Florists come in, look about and say, what is the matter here? What is it? Is it steam heat, or what is it? I say what is it? Visitors often say, I like to come to your greenhouses, the air is fine,—so different from any forcing-houses I have ever visited before. It seems so like natural open air. I am inclined to think it is more like nature. Any person observant will readily see there are many changes in the twenty-four hours that plants are treated to in the open air and thrive well, while the same plants are entirely excluded from them confined to this steady hot water heat.

H. T. Y. claims that the expense of a steam apparatus is greater than the hot water apparatus from the outset. When I put in my heating apparatus, I paid eleven cents per foot for steam pipes,—the hot water pipes were selling at forty-four cents per foot. I have four one-inch pipes to each house, excepting the propagating house, which has a two-inch pipe extra passing through the entry. Houses heated by hot water contain the same number of feet of four-inch pipe. I do not know what the three hot water boilers would cost to heat my houses. I would like to compare notes. I hardly think my boiler cost more than the three boilers it would require, and with my boiler I can heat two more houses of the same size. It is not necessary to have a steam boiler of great power, as I never require more than twenty or thirty pounds of steam.

EDITORIAL.

TRAVELING RECOLLECTIONS, No. 6.

What are known as the Rocky Mountains comprise two distinct chains, about seventy-five miles apart, and running nearly parallel with each other. The eastern range is known as the Medicine Bow, and the western as the Green River Mountains. What are known as the Parks—north, middle, and south Parks, are flats occupying a high elevation between these two. North of Colorado, in Wyoming, these mountain chains take a round turn to the West, and round this the Union Pacific Railroad winds, cutting through the Green River range at Rawlins on its way to the Pacific coast. For some four or five hundred miles the country is uninteresting, being mostly flat and without much vegetation other than the shrubby artimisias and chenopodiaceous plants afford. On every side, as far as the eye can reach, there is nothing but these ashen grey bushes of from four to five feet high, growing apparently in little clumps, so that the parched brown earth is seen everywhere over the plain between them. At Green River, however, which is one of the main sources of the mighty Colorado, matters begin to mend, and the naturalist feels again that the world offers him something worth living for. We follow one of the forks for about one hundred and fifty miles, when Fort Bridger is reached, which is about twenty miles from the Utah line. As we near the Wahsatch range of mountains, the country grows inexpressibly beautiful, so far as picturesque rocks and grand canons are concerned, though the vegetation is still poor and not equal to that of the Rockies. But no one tires of looking at the scenery, it is so remarkably varied. The Bear River, which is the great feeder of Salt Lake, is a beautiful stream. It flows down the eastern slope of the Wahsatch, and after going north into Idaho, perhaps a hundred miles, turn round parallel with itself, and enter Utah on the west of the range. The Weber River, another feeder to Salt Lake, takes the short cut and goes due west across, and the railroad follows its track. All along the Weber River line are finely cultivated farms, and evidences of thrift and agricultural prosperity, though, of course, all is done by irrigation. At Ogden, the Union Pacific Railroad continues on west, but the Utah Central Railroad branches off here, and takes us some forty miles south to Salt Lake City, which is at the southern foot of the great Lake,—the Union Pacific rounding its northern shores on its way to California. People reading merely of Salt Lake, and Salt Lake City, connect the two, so that they have no idea of the size of this immense body of water in the former. There is, probably, not less than between two and three thousand square miles of surface on this body of water. About fifty miles south is a fresh water lake, of about two hundred square miles, and this empties into Salt Lake. The city is on the plain between these two lakes, the Jordan river connecting the two bodies of water, and the city built along side of the connecting river, streams from which are led through the town. The flat plateau on which the city is built, has ridges of mountains on the east and the west about forty miles apart. So that with a body of water on the north, another on the south, and the hills on the east and the west, the city is as it were in the centre of a plain, of about one thousand square miles, which will give it as much room to spread as Philadelphia in time, without being at all cramped by its growth. At present the population is about 22,000, and its growth is probably one of the marvels of modern times. Unpopular in Illinois, the people had to elect between the hostility of their own race, or that of the merciless Indian,—and, choosing the latter, they left all behind them, and twenty years ago took up their march through this rainless desert, with about seven hundred souls. In this way they journeyed some two thousand miles, and in whatever light the world may view the sentiments which actuated such a terrible and perilous journey, there can be but one opinion that a people who could endure so much, were of just the sort of stuff to finally triumph over all physical ills, and rapidly build up a prosperous community when once they found the place to settle down. The struggle with the Indians was long and severe. The great wall for the protection of the little colony against the savages, is still standing in many places; but finally the two races became friendly, and the colony went on undisturbed. Then the fights with the grasshoppers, though less bloody, were hardly less disastrous than those with the Indians, or with their own kith and kin. Many a farm and garden, with products worth hundreds of dollars in the morning, has been stripped of every green blade before sundown; and families which had just begun after years of toil to taste of the sweets of independence, were left to begin the rough world over again. But they fought on, and again they won, but not to stay in peace. The civilization, so different from their own, and from which they had dared so long a desert journey and so much to escape, found them out with the Pacific Railroad, and the civil strife was renewed again.

This is a chapter in history about which we all know. We hardly expect to find much in gardening and farming from a people who have had such a weary road, in such a short time to go; and it is probably from this feeling of the impossible, that the great beauty and rich luxuriance of the farms and gardens impress themselves so forcibly on us. We had within a few weeks traveled through many regions favored by a better form of civilization, and by all the elements of a bounteous nature. From Pennsylvania, through Virginia to Texas, people boasted of a rich soil and favored climate; but the yielding earth was untilled, and weeds and waste rubbish lied around where the roses ought to be. If people so favored had little to show, how much more should these? But it is the parable of the ten talents over again. The Utah people have not wrapped theirs in a napkin. Hard work has been a necessity to them, and hard work has made them strong.

The gardens, of course, are not large, but rarely do we see a house without a garden of some size. It may be but a few Apples, Peaches, Apricots, Roses or Geraniums, but there is something in all. Even the poorest do a little in this line. At our visit, the Apricots were ripe, and their peculiar appearance, once seen, no lover of nature will ever forget. The trees appear to be about ten years old. We were favored by the Church authorities with a view of the city from the top of the Tabernacle, and from here the whole city seemed studded with bright green trees, covered with golden yellow globes, in almost as great a proportion as the leaves. The effect was charming. The Peach did not seem to be in as great profusion as other fruits, but the Plum and Apple were everywhere. In some instances, however, the Codling moth had found the apple out, and one cannot but feel a regret at the thought that at some future time the Curculio will play its eastern pranks among the Apricots and Plums, and the beautiful scene which greeted us will pass away for ever.

Of course, in a country where most of the watering has to be done artificially, there is not much chance for nice green lawns like those we have at the east, but these are by no means wanting. In the garden of Mr. Jennings, there was about the eighth of an acre surrounding a fountain, which was, perhaps, one of the most perfect pieces of lawn in the world. It was watered with a hose occasionally, and kept close by a machine, and was truly a living carpet of the softest texture. Another piece of lawn attached to the museum is nearly as perfect. It is laid with a gentle slope, and the water led along a very narrow wooden trough, sunk even with the ground on the highest point. Very narrow gutters, a half inch or so wide, are led parallel with each other, about twenty inches apart, all over the plot, but are so small and fine, as scarcely to be seen. This, also, is kept in excellent condition. The museum is a very good beginning for science. It was founded by a son of Brigham Young, and is quite creditable for so new a place. Science, of course, is no more flourishing here than in any new region, where people have first to battle for the necessaries of life; but in the university, the natural sciences, especially botany, is among the most popular of studies with the young people. In regard to gardening, much of its general popularity is no doubt due to the example of the leading residents. Mr. Jennings' garden, before referred to, is quite a model. The Brothers Walker, leading merchants of Salt Lake City, have very beautiful gardens and grounds, and President Young owns a nursery, from which come most of the Locust and Mulberry trees, which grace the beautifully shaded streets. Besides smaller places, Mr. John Reading has a flourishing nursery and greenhouses—one of his greenhouses being the first erected in the territory of Utah.

The country around Salt Lake City possesses much interest to a naturalist. Hot sulphur springs pour out of the mountain side in various places, making the atmosphere quite strong with the sulphury vapor. One of these had a temperature of about 120°, yet in its clear blue water a species of Nostoc was growing as freely

as plants usually do in cool mountain springs. It is a popular belief that these warm springs originate through small streams of water coming in contact with internal fires; but it is evident from the geological formation of these rocks, that the springs come down from the mountain tops through the strata, much above where any "fires" can be; and it is probable that the heat is generated by some chemical element dissolving the rocks, just as we generate heat by pouring water on lime, or sal ammoniac on iron filings. The mountains had, at one time, considerable timber, chiefly of Abies Menziesii and Abies Douglassii, with some Picea grandis, and cottonwood along the streams; but of course the demands of a large place like Salt Lake City has almost denuded these hills of their virgin forests. This cutting away must be still going on in the places farther off, for we saw large blocks of these rare trees corded up for firewood, near the Episcopal and Catholic Churches. One would suppose in view of a discussion that recently took place at Sterling, Ills., that this immense cutting away of the forests about this place would result in making Salt Lake City still more dry. But Dr. Franklin B. Hough, of Albany, who stands high as a meteorologist, and who has given some attention to the relations of trees and climate, has recently published some figures showing that since this cutting away, the rainfall has been greater and better distributed than it was before the Mormons settled there.

The Mormon authorities were particularly kind and cordial in their attention to us,—not taking us in charge, and showing us only what it might please them to show, but seconding our wishes and affording us every facility for pursuing our own researches in our own way. The narrow gauge railroads are being pushed in every direction, making spots almost inaccessible until recently, now easily within reach. Of course we felt anxious to be among the first explorers of these distant wilds, and the desire was no sooner discovered by our good friends than excursion trains were made up for Little Cottonwood Canon on one day, and another to the American Forks Canon, by the Utah Southern Railroad. In these excursions we had the company of the leading Mormon authorities with members of their families, Judge McKean of the United States Courts, and others of all parties. Up these canons are some of the celebrated mines. We visited the Flagstaff, the Germania, the Comstock, the Emma, and others, famous all over the world.

The Canon of the American Forks is one of the grandest ever seen in all our travels; and when it becomes well known, will attract as many visitors as those of the Rocky Mountain range do now. The rocks are chiefly of limestone in this canon, and the huge blocks arranged in thick horizontal strata, and then cleft in straight perpendicular lines, give the immense heights the appearance of tremendous towers, or of elaborate gigantic buildings, beyond the capacity of any brief sketch to describe. Many of us have looked up hill-sides until we imagined the tops cleaved the sky; but here we were in a mighty rift, worn through by the melting snows of countless ages, as if we were let down from heaven over the rugged sides. Often we could discern several hundred feet above our heads, huge "pockets" worn in the sides of the clefts by the eddying waters, perhaps thousands of years before the chasm was as deep as now; and in these pockets small clumps of Mensies' Spruce and the Grand Fir, would be seen growing, forming hanging gardens of the superbest styles. The tremendous extent of smooth rock, however, is not of course favorable to vegetation; and hence only on those ledges where soil can form in the process of ages, is there much forest growth. The underbrush is composed largely of the same low oak of the Rocky Mountains Quercus undulata, and the smooth maple, Acer glabrum; but we begin to find the more decided Californian plants. The Ceanothus velutinus with thick shining leaves about the size of an apple leaf, is very common. This would be a most desirable shrub to cultivate. The leaves dried, emit a delicious fragrance. The plant is known as "Madrona" to the Indians. Another very pretty shrub is a low evergreen of the Euonymus family, Pachystima myrsinites, which would probably prove quite hardy with us. The leaves are thick, of a deep green, and about the size of the tree box. Many of the herbaceous plant are very beautiful. The Zauchneria Californica, with flowers like Fuchsias, growing on trailing branches, was much more brilliant than we have seen in plants from a more western longitude. Here we gathered our first specimens of Aquilegia flavescens, the short spurred yellow columbine,—not quite so beautiful as the long spurred A. Chrysantha, which has been found in the southern part of the State. The beautiful half shrubby Pentstemon Menziesii was also very abundant here. A very beautiful shrub, and rather abundant on the foot hills was Cowania Mexicana. The flowers are as large as our blackberry blossoms, of a creamy-white; and it would also, no doubt, prove quite hardy.

Our narrow gauge track finished about half way up the canon, and just as we were approaching the more alpine regions, where the loveliest flowers usually grow; and those who have read of Moses dying when in sight of the promised land, can imagine how a party of naturalists felt, when compelled to return just as they had reached a promising field, over which the foot of a botanist in all probability had never trod. Still there is no help for these disappointments. Travelers have to be at certain places at certain times; and as here was to be our turning point towards home, we returned to Salt Lake City, bade adieu to the many friends who had treated us so kindly, found our iron horse pawing the dust somewhat impatiently, and so after tucking ourselves into our little berths in view of a five days' ride, took another little jaunt of twenty-five hundred miles, and found ourselves a half hour ahead of the time fixed for on our departure, safe at home.

EDITORIAL NOTES.

Doyenne du Comice Pear.—In our notice of the Pennsylvania Horticultural Society's exhibition last year, we observed that of all the immense number of pears on exhibition, new or old, few, if any, were better in quality than the Doyenne du Comice. It seems to be gaining in reputation all over the world. A recent *Gardener's Chronicle*, says of it: The high merits of this first-class fruit are now becoming pretty well known. It is not only the best pear of its season: it is the best pear in existence at any season. It may be noted that, for four years in succession, when prizes for the best flavored pear were offered by the Fruit Committee, the Doyenne du Comice was successful. Another merit attached to this fine pear is, that the whole of the fruits are of good quality, and keep in a good condition a long time after being ripe. The fruits are large, frequently weighing one pound each, of a roundish turbanite shape, and regular. The eye is small, and is frequently wanting; the stalk short and stout, set a little on one side; the skin is of a greenish yellow, greatly covered with fawn-colored russet, especially round the eye and stalk, and this is often prettily reticulated. On the most exposed fruits there is often a fine glow of vermillion. The flesh is very pure white, very buttery, and exceedingly rich and juicy; in season during November, and later.

Pear Beurre Hardy.—This old pear—for it has been known now for fifty years—is tolerably well scattered in leading American collections, but does not seem so far to have made for itself a great name. It is somewhat the size and appearance of a Beurre d'Anjou, but with a russety covering in many cases. It appears to be much more highly prized in Europe. A writer in the *Gardener's Chronicle* thinks it should be in every collection.

Santolina incana.—There is a great want of grey or silver leaved plants for ribbon bedding,—the silver leaved Centaureas have had to do the hardest work in this line the past year or two. The Santolina, an old plant, but not in much repute, came in for this purpose last year, and came acceptably. The leaves, besides its interest from the silvery hue, have narrow and densely toothed or notched leaves, which give it a distinct character from the plants hitherto employed. It is easily raised from cuttings. It grows about a foot high, but can be kept down by pinching.

Baronne de Mello Pear.—The difference which peculiar circumstances have on the character of pears is strikingly illustrated by a remark of a writer in the London *Gardener's Chronicle*, that this pear, from which so much was expected years ago, and which has proved in so many instances a great disappointment, is one of the most juicy and luscious pears when grown in pots in an orchard house, as is now very popular in some parts of Europe.

Origin of Vitis vinifera.—The *Gardener's Chronicle* has the following note: "We have lately received from Dr. Regel an interesting note on the vines of North America, China, and Japan. According to the Russian botanists, the cultivated vine is not of pure specific descent, but a hybrid between Vitis labrusca and V. vulpina. Both species are natives of North America, Japan, Mandchouria, and the Hymalaya. M. Regel arrives at his conclusions from the following considerations:—First, the vine is not known in a truly wild state, but only as an escape from cultivation; second, the two species, labrusca and vulpina, are wild in the district of Asia, where the cultivation of the vine originated; third, the European vine introduced into America has

never given such good results there as have the varieties of labrusca and vulpina. Regel also brings forward, as an objection to the Darwinian theory, the circumstance that the cultivation of the American vines has resulted, in the course of a few score years, in the production of as great an amount of variation as has been obtained in Europe and Asia during tens of centuries. Assuming the facts to be as Mr. Regel states them, we do not think they offer any very serious objection to the evolution hypothesis. Evolution is limited, and controlled by circumstances; and if those circumstances remain unaltered, the range of variation is correspondingly checked. We should infer that during the thousands of years the vine has been cultivated, the external conditions have not greatly changed."

It is difficult to understand how Dr. Regel can come to his conclusion from any of his three propositions. If our native grapes are hybrids of the Muscadine and the Fox, and the *Vitis vinifera* has the same origin, why should not the European vine do as well here as the others? As for hybrids between the Muscadine and the Fox, Dr. Wylie has shown that it is nearly impossible. Dr. Wylie's experiments have been recorded in the Proceedings of the Academy of Natural Sciences of Philadelphia, which is within the reach of Dr. Regel; and we cannot but think that if leading men like Dr. Regel were to give a little more time to bibliographical research, instead of working up theories, science would progress the faster for it. Moreover it is a mistake that the European grape has "*never* given as good results" as the American grapes. It is well known that these grapes will generally do well for a few years—quite as well as many "natives" so called. Indeed out of scores of native grapes introduced the past twenty years, many do no better than the foreign ones. Only two or three do well.

Jerusalem Artichoke—In a kind notice of the *Gardener's Monthly*, the literary editor of Forney's *Daily Press* has the following interesting note in regard to the Jerusalem Artichoke: The best article this month is a new chapter from the Editor's Traveling Recollections. On page 90, the Jerusalem Artichoke (*Helianthus tuberosus*) is correctly stated not to belong to the ordinary artichoke (*Cynara Scolymus*). In fact, it takes its name from the common sunflower, to which genus it is a kin, *girasole* being the Italian for sunflower, and is called "artichoke," from a supposed similarity of flavor in the edible part to the artichoke. In that plant, the part eaten is that which is called the *cheese* in thistles. The tubers, very like potatoes in appearance, which the Jerusalem Artichoke abundantly produces, are cooked by boiling in milk or water, and sometimes are made into Palestine soup, which has a delicate flavor. This vegetable costs about four cents a pound, and is largely consumed as a low-priced delicacy throughout England, in which country it has abounded for centuries—long before potatoes were brought thither from America in the sixteenth century. The Jerusalem Artichoke is a most prolific plant, scarcely to be eradicated, once that it has possession of a garden. As an edible vegetable, it has only to be known to be liked.

SCRAPS AND QUERIES.

CARE OF ORANGES, LEMONS, ETC.—*Mrs. J. H. S., Quincy, Illinois*, asks: "What is the best work on care and culture of tender shrubbery, such as Japonicas, Lemons, Oranges, etc.; also on Orchidaceous plants? I have a Peristeria Elata. If you can give me any information regarding the care of it, will be greatly obliged."

[There is no work to which we can refer our correspondent. The best we can do is to offer to help her in this column, when she is in any difficulty in regard to her plants. The Camellia, for instance,—Japonica as it is often called, will often get unhealthy through its fibrous roots rotting away. This can generally be known by the weak growth it makes. A healthy Camellia ought to grow at least six inches a year. When it makes but two or three inches of growth a year, something is wrong. A very good way to recover them is to cut them back to "stumps," that is to the hard wood, and plant them out in good garden ground—such ground as will grow good vegetables,—then lift them up again before the frost comes, and pot. By this we lose one season of flowering, but we have good healthy plants for years afterwards. Lemons, Oranges, Cape Jasmines, and Oleanders, may be served in just the same way. If there is any peculiarity in your plants that may be puzzling, write and we will gladly help you.

Orchidaceous plants, of the character of Peristeria elata, are easily managed. This is the Holy Spirit plant of the Mexicans, so called from the resemblance of the expanded flower to a nestling dove. To grow it fill an eight-inch pot with a mixture of broken pots, moss, and half-rotten wood, and set the bulb firmly in the top. Give it the warmest place you can find in summer, and a lively heat of about sixty in winter time. This is as near as we can tell one how to *grow* these orchids. Some little art is required to get them to flower well, which can only be learned from experience. At certain periods of their growth they are to be gradually dried, and at others abundantly watered. Though the plant is in many collections, it is not often seen in bloom. It has been before the Pennsylvania Horticultural Society only about three times in twenty years—once by the writer of this.]

COLEUS NELLIE GRANT.—*Messrs. Murdoch, of Pittsburg, Pa.*, write that a variety now being sent out under this name, is identical with one they originated three years ago, and which they named and distributed as Dr. Gross.

GELSEMIUM NITIDUM.—*Miss Mary F., Dayton, Ohio*, says: "Is the enclosed Gelsemium nitidum, or G. sempervirens?"

[The two names both belong to the same plant. Michaux called it G. nitidum, and Persoon G. sempervirens; but the last has been dropped by botanical authorities.

The plant is the Carolina Jasmine, and the sweet odor of the bright yellow blossoms enchants every traveler in the Southern States. It is nearly hardy in Philadelphia,—that is, it suffers only in the severest winters. Is it hardy at Dayton?]

RAISING SEEDS.—*H. M., Portland, Oregon*, writes: "I would like to know how to treat seeds of the following: Magnolia, Linden, Tulip tree; Cypressus McNabiana; Cypressus stricta elegans (hardy?), Pendula; Pines: Black Austrian, Siberian Silver, Pyrenaica, Sabiniana; Thuja: Siberica, Pyramidalis; Juniperus: excelsa, communis, pyramidalis, Chinensis, Suecica, English Laurel. Are any of these too tender for 15° to 20° below freezing? Which of them require two years to come up?"

[In this section of the country, all these plants would live at 15° to 20° below the freezing point. It is not temperature alone which fixes hardiness—the various elements which go to make *climate* decide this. Evergreens, as a rule, ought to be hardier in your part of Oregon than in Philadelphia.

Magnolia, Tulip, Linden, and Juniper, in many climates, remain in the ground a year before growing. Keeping them constantly damp for some weeks, is the most accelerative process.

The other seeds generally sprout readily after a few weeks sowing. They like to have the ground elevated a little, so that water will not lie on it, and to be partially shaded from hot sun.]

RELATIVE AGE OF TREES.—*G. H. B.* says: "American trees live longer in Europe (France) than they do in this native climate. American Oaks are injured by *mildew* caused by the *July fogs, alternated with hot sun.*"

CEREUS SPECIOCISSIMUS.—*Mrs. H. G. P., Norwich, New York*, inquires where she can get a plant of this old and beautiful flowering Cactus. We suppose that most of those Florists near New York, who keep general collections, will have it. Parsons of Flushing, or Menand of Albany, may have it. If it can be found at none of these places, we will procure it for you, if the full name and address is sent to us.

POND LILY.—*Mrs. H. G. P., Norwich, New York*, asks: "Where can I procure a Pond Lily?"

Almost any of the New Jersey florists can probably furnish it. Most likely, George Such, of South Amboy, as the plant is growing wild not far away. We suppose the Nymphœa odorata is the plant referred to. It is a wonder there is not more inquiry for this beautifu plant. It is, of course, not as grand a flower as the celebrated Victoria regia, but it resembles it on a small scale, and its purity and sweetness should commend it to all who have a sheet of shallow water, over which ducks saileth not. Our correspondent also inquires for a pink species of the same family. Probably the Egyptian Lotus is referred to, Nelumbium speciosum, which lives out in this country when the ice

does not reach the mud; but we do not know of any one who has it now. Caleb Cope, in the old Spring Brook times, grew it in the open air from Egyptian seeds direct, but in the mutations of the property the plant has disappeared.

PANCRATIUM.—*Mrs. H. G. P.* asks: "What is the Pancratium Mexicana or Swamp Lily?"

[Pancratiums are bulbs of easy growth, and which flower freely. The flowers are pure white, and have a peculiar web like film uniting the lower part of the petals. One species, P. rotatum, a native of the Southern States, is probably hardy in Pennsylvania, and well worthy of being introduced into cultivation.

DRACÆNAS.—*Mrs. H. G. P.* inquires whether the Dracæna or Dragon tree, usually grows lighter in color—almost white—when it becomes three or four feet. The Dracæna Draco is usually always green, but all the Dracænas are liable to change. D. ferreæ, and D. terminalis, often vary in their colors, but we never knew the old-fashioned Dragon tree to change.

NETTING FOR GARDENS.—*J. B. W., Woonsocket, R. I.*, writes: "I take the liberty of presenting to you a sample of garden netting, for the protection of fruit, fruit trees, vines, plants, etc. Also to ask your opinion as to the possibility of introducing this netting. I don't think it has ever been tried in this country. I know it has been in use in England twenty-five years; saw it in use myself on a recent visit: the gardener told me it was the only way to raise perfect fruit. So if it is a good thing in England, why not in this country? If it will go, I am prepared to make it like sample—5¼ feet wide at 22 cents per yard. Please give your opinion in *Gardener's Monthly*"

[This netting is formed into square meshes of about one-quarter inch square. The English use netting chiefly against birds, which swarm in that country. Our worst trouble is against insects. Our correspondent sends us two samples. One is steeped in a preparation of tar, and we have little doubt but that this will keep away many insects. The odor of tar is disagreeable to most insects. Some people have thought that tar will even frighten the Curculio, though we believe this one is an exception. We think the Curculio is tar-proof. However, this is open to doubt, and we should like to see it tried. He could, of course, get through these meshes if he were to try. To protect from birds, it is admirable, and just the thing to throw over beds, over which, perhaps, chickens might chance to stroll. We believe in many ways this netting may be made useful to gardeners and fruit growers, and are glad to give what little encouragement we can to the attempt of these manufacturers to introduce it.]

NO-CORE APPLE.—*J. A., Warren Tavern P. O., Chester County, Pa.*, inquires whether the No-Core Apple noticed by T. S. R. in the February number, is anywhere for sale.

SHADING GREENHOUSES.—*Mrs. H. G. P., Norwich, N. Y.*, asks: "In washing or painting the glass of my greenhouse, shall it be done on the outside or inside, and what the material?"

[It is best to shade on the outside. If put on inside, it is very hard to get off. Nothing has yet been found that is just the thing for shading; but on the whole, a thin paint of rye flour is the best. Things which stick on the glass well, are too hard to get off when the fall comes. Rye flour comes off gradually, and by fall is nearly all gone. Sometimes, after heavy rains, it may get thin, and it may be necessary to do it twice in one season.]

INQUIRIES AND ANSWERS.—A lady who asks several questions in this number, says: "Excuse me for asking so many questions, but I find the questions and answers very valuable in the *Monthly*. If others are equally interested in my questions, I shall be glad that I have troubled you."

[All these inquiries are welcome. It is seldom that one wants to know anything likely to be asked us, that hundreds are not also interested in the replies. At least we believe so.]

TREATMENT OF LAURUSTINUS.—*Miss Mary F., Dayton, Ohio*, says: Can you tell me how to treat my Laurustinus, so as to secure its blooming. The bushes are to all appearances healthy, and they grow finely during the year. For six or eight years they were a mass of flowers every spring, but for as long a time they have had no flowers worth mentioning. I find on inquiry, that this is the case with plants belonging to other collections.

[When Laurustinus get into these stubborn moods, planting them out in rich garden ground in the sun for one summer, will generally bring them to terms. Of course, they will require a little careful potting in the fall.]

SWEET ALYSSUM.—*Miss Mary F., Dayton, O.*, says: "I am not successful with my Alyssum border. The flower buds are attacked by a small black insect,—as active as a flea,—and my borders are flowerless until the frosty nights put an end to the depredations of this little pest."

[The insect enemy is the cabbage or turnip fly. It is often a great nuisance. Few people succeed in keeping it away. Can any one give good advice?]

COAL OIL AND WATER FOR INSECTS.—*Miss F.* says: "You published a remedy some time ago,—water and coal oil, but as these ingredients will not mix, there was danger of killing my plants with the oil."

[Water and oil will not mix. Oil floats on the top. If so put and then used with a water-pot, of course the pure water all goes out first, and the oil all goes out in one mass *last*. But if a syringe be used, a little oil is drawn up each time with the water, and thus can be distributed.]

THE CURRANT WORM.—*G. H. B. Northampton County, Pa.*, says: "Will you please inform me through the *Monthly* if there is a known remedy for the Currant Worm, which pest has nearly destroyed all the currant bushes in our neigborhood?"

[The Currant *borer* is easily kept in check by cutting out in the fall all the shoots infested with the larvæ and burning them. The weak growth will generally indicate the presence of the foe; or if not, a spot where the stem was bored to deposit the egg will.

The Currant *worm*, as caterpillars are generally called, has never appeared in this region. In Western New York, where it has been destructive, Hellebore powder is said to be an effectual remedy.]

GROUND MOLES IN A VINERY.—*A Subscriber, Pawling, N. Y.*, asks: "Can you tell me how to get rid of Ground Moles that are in a Grapery that I am forcing? Do they injure the roots? What do they live on?"

[Tow dipped in gas tar and buried in their runs will drive them away, and anything that eats grape vine roots will eat peas. Soften a few with water, then make a small hole and insert arsenic, and it will kill whatever eats.]

LAWN MOWER.—*J. L. H. F., Dayton, Ohio*, writes: "Some months ago you stated in the *Monthly* that there are now lawn mowers that would cut short and long grass, wet or dry. What is the best lawn mower now for a small place, where it is important to run up pretty close to plants without injuring them, which cannot be done with mowers where a roller runs a foot, more or less, before the knife that cuts the grass?"

[The mower we had in our mind at writing, was one known as "Excelsior." It may be that others will work quite as well under the circumstances named as this one. We speak of this one only because we happened to see it doing this kind of work.]

GRASS ROOTS FOR NAME.—*John, Fairfield, Ohio*, says: "I find this in the garden, very difficult to kill. Will anything but *burning* do it?"

[This is one of the Muhlenbergias, and is known here as the Mole foot grass. Digging them out as they appear, picking out carefully all the pieces, is the only known remedy.]

HARDY LILIES.—*C. O. H., near Buffalo, New York*, writes: "Will you please state through your *Gardener's Monthly* whether Lilium Brownii, giganteum, auratum, and Thunbergianum, also the Californian Lilies, are hardy in this latitude? If there is any other popular varieties that does not endure this climate with slight protection in winter."

[All the Lilies named are hardy in your latitude, and most likely the Californian Lilies will be also when tried, as the Californian Lilies approach closely the Japan species in all their general characters.]

GREENHOUSE BORDERS FOR CAMELLIAS.—*H. M., Portland, Oregon*, writes: "In looking over the volumes of the *Gardener's Monthly* for seven or eight years (I am a subscriber from before the war), I find no information on the following question, and therefore I come direct to you with a request of answers to them. How can I construct the borders in a small greenhouse, 16x22 feet, 12 feet high, for permanent planting of Camellias? How far apart (20 large plants, with about 15 to 20 buds)? Where to lay the flue? What soil? *What*

other plants can I plant in the same house? Roses? Abutilon? Orange for leaves? All to be for winter cut flowers. Can Camellias be taken up again safely?"

[How to arrange these borders will depend very much on the plan of the house. We suppose one, 16x22 feet, would be a span roof. In this there might be a twelve feet border made in the centre, into which Camellias and Oranges may be planted: and after a walk has been made round the border, there would be room for a three or four feet table on each side, on which Azaleas, which here are among the most popular plants for cutting, or other winter-blooming plants might be grown. The most essential thing in an inside border, is to have a good under drain to carry away the water, or the soil will likely sour. The border may then be made two feet deep, and filled in with soil made of rotten soddy vegetation: or of what is known to gardeners as peaty matter from bogs, will still be better. If of the first-named class, a small quantity of dry cow manure mixed with it, will improve it. It will also be best to round the border, and in this way elevate them as much as one foot in the centre above the surrounding walks. Light iron supports to the greenhouse may be employed, and Abutilons run up these, and other popular plants for winter cutting. Roses will hardly do in a house that is just fitted for Camellias and Oranges. They need a great deal of light to flower well under glass, which the others do not need. In this part of the world, for winter cut flowers, the next most popular plants are Carnations, Mignonette, and Heliotrope.]

SNAILS AND SLUGS.—*L. L., Cazenovia, N. Y.*, says: "Will you state to your lady readers and Fern lovers—if you think the information worth having—that the snail, so annoying in Wardian cases, may be found easily at night, by searching for them with a lamp. They seem to come out of the ground after dark."

BOOKS, CATALOGUES, ETC.

THE ILLUSTRATION HORTICOLE—Published at Ghent, Belgium, by Mr. Linden, and edited by Mr. Andre.—This serial has had a world-wide reputation for the great beauty of its colored plates, and the excellence of its reading matter. Its circulation abroad has so increased that Mr. Linden now issues an addition in the English language, as well as the original in French. The number before us has a representation of Oncidium fuscatum, a great beauty,—the Ceroxylon andicola, the Wax Palm of the Andes, and others, together with full accounts of the same.

MINNESOTA STATE HORTICULTURAL SOCIETY.—REPORT FROM 1866 to 1873.—VOL. I. FROM SECRETARY HAINES.—We have read this little volume with a great deal of pleasure. It is like being in at the creation of a new world, and living along with it, till all its creations become mature. Here, for instance, was a new country, which in a few years pushed its wheat product from five million bushels to twenty million; but yet could grow no fruit. Then they found they could grow crabs at any rate,—but still endeavoring, they have come to grow apples and pears as well as any one else. They have found that even in this Russian climate, there is a way to do things; and that way only different, not more costly, than in any other place. Much credit is due to Col. Robertson for the great success of Minnesota fruit culture. Others have worked hard through losses and only partially successful experiments; but he seems to be the veteran in this great fruit campaign.

It reads a little striking, when a State which a few years ago thought it would not raise fruit, now talk about getting an apple to weigh *four pounds*, and hoping "to supply all the Union with fruit." Still with the great success which has so far attended them, when all odds seemed the other way, our Minnesota friends may well be pardoned if the star of hope seems larger to them than any one else.

CATALOGUE OF THE LIBRARY OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.—A new edition has just been issued. We think nothing may be risked in saying that this is about the best horticultural library in the world. It must be a nice thing to be a Boston gardener, to have the chance of enjoying a collection like this. We note that the society has duplicates of which a list is given, which they will exchange for books which they have not. Mr. E. W. Buswell is Corresponding Secretary.

THE GREAT WESTERN is the title of a new monthly, published in Philadelphia. It is literary in character, but takes in science and art, agriculture, floriculture, and every thing about which an intelligent person is supposed to care for. It seems destined to take rank with the popular magazines of the day.

NEW AND RARE FRUITS.

GRAPE GOLDEN QUEEN—In Grapes, the pride and glory of British gardens, if this season we have had no monster Duke of Buccleuch to startle us, our indefatigable friend, Mr. Pearson, of Chillwell, is at least determined to keep the ball rolling. In his *Golden Queen*, which has been certificated at Kensington, we have at once a very handsome and a very excellent late White Grape—a welcome addition to this somewhat scanty class. In appearance it greatly resembles a small-berried White Muscat of Alexandria. It was raised from the Alicante crossed by Ferdinand de Lesseps, which, it may be remembered, was a cross from the Strawberry or Fox Grape. This Golden Queen has somewhat of the peculiar perfumed character of its progenitors. Another Grape of considerable promise, in the character of the Muscat Hamburgh, is *Venn's Black Muscat*. It is stated to be a much better keeper than the Muscat Hamburgh, and of a stronger and hardier constitution. If it should prove so it will be of considerable repute.—*Gardener's Chronicle.*

THE YATES APPLE originated with Mr. Matthew Yates, of Fayette county, Georgia, ten miles east of Palmetto. There are many orchards of this variety in Fayette and the adjoining county of Campbell, from ten to thirty years planted. We have opportunities to compare it with other varieties from October to March, and the almost universal public verdict is that the Yates is the very best we have. I have eaten them in March as fresh, crisp, and juicy as at Christmas, and if properly stored I believe they may be kept until apples come again. It does not become *jelly-fleshed or water-cored* as some kinds, nor does insect punctures cause it to dry-rot, as others.

It comes sound, even if blurred, and scarcely ever fails to come. It will here, at least, in its native home, continue to be planted more largely than any variety at present known. I am led to these remarks by the various opinions I notice in the fruit catalogues along the latitude of its nativity. One says: "A good Fall apple of Southern origin;" another classes it "poor," and another "ordinary." You, Mr. Editor, class it properly, but I don't think you sufficiently *enthused* as to its flavor. Mr. Hunley says "Red Warrior is unquestionably the finest dessert apple we have;" and you say "Red Warrior is identical with Yates."

I notice Yates, grown in Carroll county, is finer than Yates in Fayette, and it may be that Mr. Hunley, being still farther West, may have it finer still.—*Cor. of Farmer and Gardener.*

NEW GRAPES.—*A new Grape—Gros Dore*—has lately been introduced by M. N. Gaujard, of Ghent, and a colored figure of it is given in the current number of the *Bulletin d' Arboriculture*. The berries are round, of an amber-yellow color, and a sweet, slightly perfumed taste. It is a fortnight earlier than Black Hamburgh, and keeps well. It is said to be a cross between Stockwood Dore (Golden Hamburgh) as the seed parent, and San Antoni, as the pollen parent. The San Antoni is a Grape principally cultivated in Catalonia. Its berries are of fine black color, of ellipsoid form, and the flesh is firm. The Stockwood Golden Grape is, accord-

ing to the *Florist*, a cross between Black Hamburgh, as the seed parent, and Chasselas de Hollande, as the pollen parent; hence a black Grape fertilized by the pollen of a white one has given origin to a white one. The Gros Dore, on the other hand, has originated from the fertilization of a White Grape by a black one. Other instances of a similar character have been recorded in our columns from time to time, but we quite agree with M. Rodigas, that the cases demand strict scientific scrutiny before the asserted origin can be considered as proven. —*Gardener's Chronicle.*

EARLY RIVER'S PEACH.—Brehaut, a well-known and reliable English Pomologist, says that this peach "promises to rival Early Beatrice in precocity. In 1872, it was the earliest peach of all to ripen. It is a magnificent fruit in every respect, of good size, showy, and delicious."

NEW AND RARE PLANTS.

HAMAMELIS ARBOREA.—A NEW HARDY TREE.—Our readers are well acquainted with the American Witch Hazel, Hamamelis Virginica, which flowers as winter advances, ripening its last year's seeds at the same time. It is an interesting plant, and always attracts attention. It is not, however, very showy.

A new species has been introduced from Japan to England, and the continent, which has recently been figured in the London *Gardener's Chronicle*, and which grows to be a small tree 15 to 20 feet high. The flowers appear, by the drawing, to be double the size of the American species, and each has a crimson spot at the base of the corolla. Dr. Masters says there are three other species yet to be introduced, H. Japonica, H. chinensis, and H. Zuccariniana.

PEUCEDANUM NUDICAULE.—Mr. Phœnix writes:—Rev. Geo. Ainslie, Lapwai, Idaho Territory, sent me under date January 8th, 1874, several bulbs with flowers in bloom. From that cold, northern *habitat*, it seems odd to get winter blooming plants. He writes about them as follows: "I mail you bulbs now in flower—its *habitat* among the loose rocks on the upper base of our high hills. I climbed nearly 1000 feet to get these to send you. It is umbelliferous, and the flower, when fully open, is quite fragrant. I think it should be fine for rock work. It stands here pretty severe exposure, and is a persistent winter bloomer. The root is edible. The hogs eat it, and I think the Indians also. It is singular in its solitary winter blooming, for there will be no other flowers open for perhaps two months. Last year when in bloom we had mercury as low as 16°.

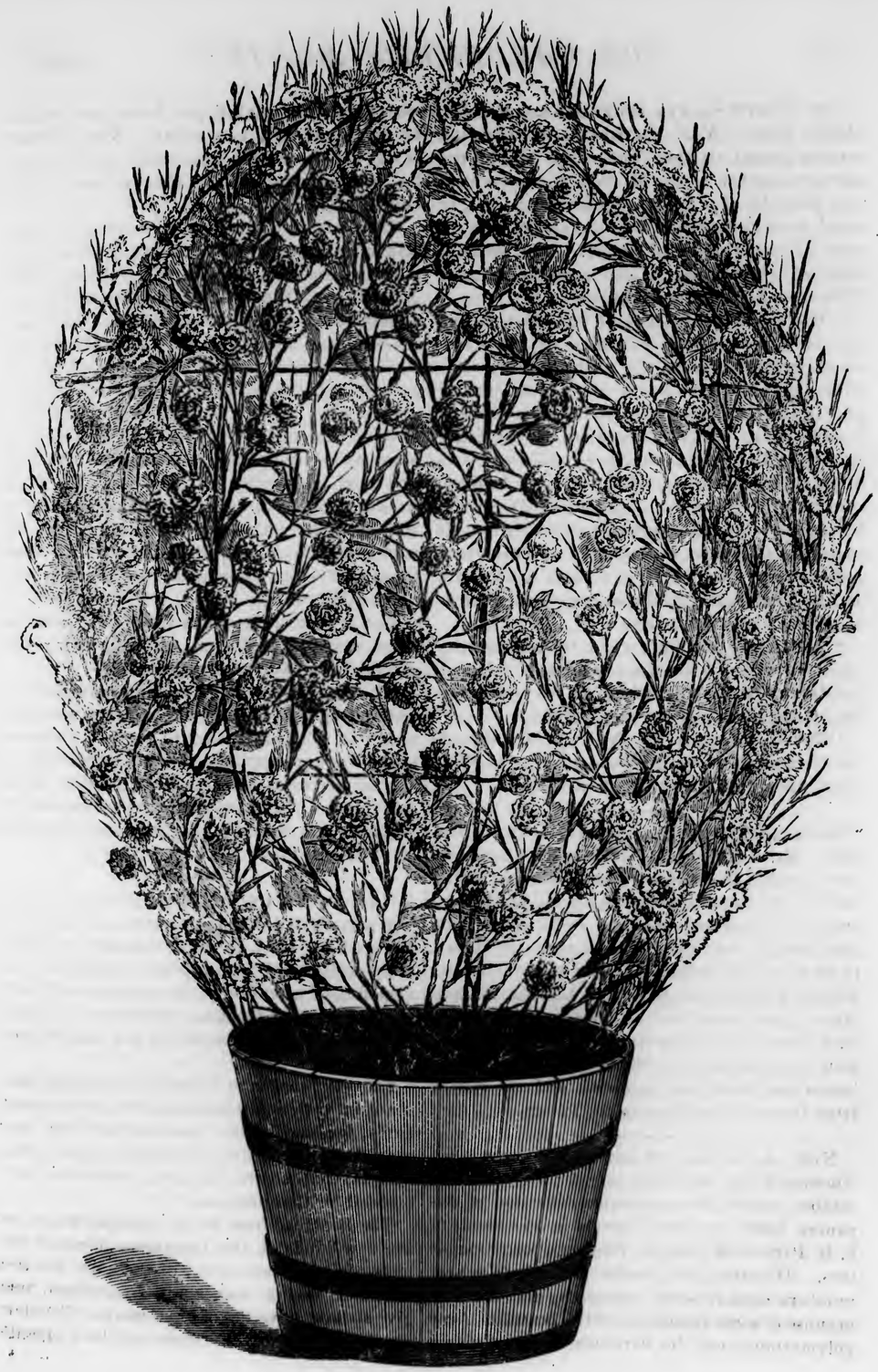
S. Watson for Asa Gray, Cambridge, Mass., writes of it thus, date February 7th: "Your plant is apparently Peucedanum nudicaule of Nuttall one of the early flowering umbellates, with tuberous roots, much used by the Indians for spring food. It is hardly deserving cultivation, unless for the chance of improving the root so as to make it valuable as a vegetable."

TACSONIA INSIGNIS.—Tacsonia is a genus nearly allied to the Passion flower, and some of our best winter bloomers are found among them. The *Florist and Pomologist* figures this species: It is from Bolivia. As many as a dozen flowers are borne from each hanging branchlet. The flowers are of a brilliant carmine, and are sometimes six inches across. The *F. and P.* thinks it will do well in a cool greenhouse.

PLATES OF FLOWERS, &C., IN AMERICAN CATALOGUES.—Lane's improved Sugar Beet forms a nice colored plate in the catalogue of D. W. Ferry & Co., Destroit Michigan.

The beautiful scarlet Larkspur, Delphinium nudicaule, and the Viola cornuta alba, with other pretty things, make up the colored plate in catalogue of Crossman Brothers, of Rochester. Briggs Bro., of Rochester, have a plate of beautiful double Portulaccas; and in Fleming of New York is one of the prettiest plates of double Zinnias we have ever seen.

CARNATION LA BELLE.—A few months ago, we gave an account of the new perpetual Carnation La Belle. The following cut represents one grown in England, and will give a good idea of the great beauty of a well grown plant.



THE WHITE SALVIA SPLENDENS.—*Mr. Jos. Meloon, Bergen, N. J.*, contributes the following note in regard to this plant: "I see in the January number of the *Monthly*, a communication from W. L. Akers, of Johnstown, Pa., in which he criticises the White Salvia as being a very inferior variety of Salvia. And while I agree with him in part of his description, I must differ from him in other portions.

"The sporting tendency of the White Salvia was most prominently presented by the specimens cultivated by us the past summer. But while the color of the flower is not of the purest, and the blooms drop more readily than those of S. splendens. Still, it is nearest to the latter variety in all qualities combined, and bedded in alternate rows or masses makes a most brilliant contrast. With us the past season, its growth has equaled the most vigorous, and side by side with the splendens variety, the blooms stood until a very severe frost cut them both down. It also seeds quite freely, although the seed is apt to shed before fully ripe.

"In cases of sporting, when the red mingles with the white on the same blooms, it is much handsomer than pure white or red specimens are, as the markings are very distinct.

"Taken altogether, the White Salvia, though not of great value by itself, is a superior bedding plant when used with the red varieties."

SEEDLING ZONALE PELARGONIUM, CHAS. BITZER.—Mr. Bitzer, florist of Philadelphia, hands us specimens of a new seedling geranium of his raising, which promises to be a good addition to our list of bedding varieties. In its present pot condition, it is quite as good as the best known to us of its class, which is that of General Grant, Lucius, Lanata, and so forth. But Mr. B. says after a three years' trial as a bedder, side by side with these, it is pronounced by all who have seen it, as superior to them. The flower and leaves are thick and vigorous, and the flower truss thrown up well above the foliage.

NEW JAPANESE PLANTS.—We learn that Thomas Hogg, before leaving for Japan in December, placed his remarkable collection of Japanese hardy trees and shrubs in the hands of S. B. Parsons & Sons, at Flushing, for propagation. His stock of Double Chinese Wistaria numbers already some hundreds, and there is promise of some thousands of the beautiful Acer polymorphum and its varieties—a dwarf maple with purple and pink tipped leaves, one variety as finely cut as a lace collar. None of these things can be ready to send out for a year or two; but it is pleasant to know that we can one day have them.

There are also four sorts of variegated leaved Camellias, some brightly variegated Oaks, variegated Laurel, variegated Aralia Sieboldii, variegated Privet, Osmanthus, Holly, Ash, and Yew, a new Rhododendron, several new Magnolias, Andromedas and Junipers, Pinus Massoniana variegata, a golden leaved Pinus of great beauty; a dozen varieties of that numerous tribe Retinospora, a new Picea, a new Japan Hemlock, very striking; two new Abies, a variegated Cornus, approaching in beauty the variegated Negundo, and much surpassing it in hardiness; the Japan Persimon, and the Eulalia japonica, a hardy striped grass with leaves like Arundo donax variegata, and plumes, which throw in the shade those of Pampas Grass, and droop over the stem like ostrich feathers.

These, with many others yet to be named, because unknown in Europe, are being propagated as rapidly as their nature will admit.

Mr. Hogg hopes to make more valuable collections, now that the interior of Japan is opened, which it is his intention to send to the same house for propagation. His old experience as one of the most intelligent cultivators which this country has known, will enable him to make judicious and discriminating selections from the large field in Japan.

HYBRID BEGONIAS.—For some years attention was given to the improvement of the Begonia, with the view to the development of handsome foliage. Of late years hybridists have turned their attention to the production of novel colors, and other blooming attractions. Among these Mr. Bull announces in his new English catalogues:—

From the seed now offered, not only will most beautiful varieties be produced, but perfectly new kinds, for the flowers from which it has been saved have all carefully hybridized, pains having been taken that the varieties and colors were blended for that purpose.

The Begonias from which this seed was saved are new kinds of the handsome flowered bulbous-rooted section, many of them not yet sent out, and having been again hybrydized, must give striking novelties of great merit. The flowers that this seed will produce will be of gigantic

size, many of them as much as two inches in length by three inches in breadth; and the colors exceedingly varied, embracing crimson, orange, pink, carmine, salmon, orange-scarlet, cinnamon, blush, lake, rose, vermillion, and various intermediate shades.

Brilliant, very rich bright orange, a fine showy flower.

Caroline, deep rosy pink, with broad petals.

Climax, deep rich rosy carmine, the two outer petals extremely broad.

Corsair, rosy salmon, profuse bloomer.

Dazzle, bright reddish crimson, a fine flower, with short broad petals.

Ensign, bright pink, a very elegant variety.

Gem, cream color, the reverse of the petals light pink.

Glitter, vivid orange scarlet, attractive.

Hermine, bright orange cinnamon.

Irene, salmon, distinct and good.

Lothair, deep rose, a fine flower, with short broad petals.

Magnet, beautiful light pink, the reverse of the petals deep pink.

Mazeppa, very light cream color, the reverse of the petals tinted with orange pink.

Meteor, intense scarlet vermilion, very bright and showy.

Phillis, sulphur, shaded with pink.

Seraph, soft pink, the exterior part of the two outer petals suffused with rose.

Surprise, bright pink, a very pretty color.

Trojan, bright rosy pink, very distinct.

FLOWER GOSSIP.—In the Pentstemon Palmeri of Dr. Gray, a species allied to P. Cobæa and P. Jamesii, a very distinct and novel form of this interesting genus is added to our list of garden plants. It grows 4 feet high or more (hence Dr. Gray's description, sesquipedalis, must have been made from imperfect materials,) the stem being terminated by a noble paniculate inflorescence. The young shoots from the base have opposite, long-stalked, fleshy, glaucous leaves oblongovate in form, with coarse, distinct, and remarkably prominent marginal teeth; while the leaves on the flowering stems are short and broadly ovate, completely connate, with the edge turned up so as to form a basin around the stalk. The flowers are rather more than an inch long, the tube remarkably inflated above, and contracted just at the base, where they are set into the short inconspicuous calyx. The color is a pale rosy lilac with a purple stripe answering to each of the lobes of the lower lip, which is remarkably elongated and deflexed, while the upper lip is projected forwards, and merely revolute at the edge. The bearded sterile filament is very conspicuous at the mouth of the tube. The plant is very ornamental in character, as well as perfectly distinct, and will be welcomed to every garden where hardy perennials are cared far—the number of which we are heartily glad to see is day by day increasing. We have to thank Mr. W. Thompson, of Ipswich, for specimens of this novelty.—*Gardener's Chronicle.*

ULMUS BERARDI.—This is a very remarkable and distinct variety of the common Elm (Ulmus campestris), raised in 1865 by MM. Simon-Louis of Metz. It forms a very bushy shrub with very slender branchlets, and in its foliage exactly resembles Comptonia asplenifolia. The leaves are of a very dark green, almost black, very small, and irregularly crenated, like those of Planera crenata, and usually stand erect on the branches, which they almost entirely hide from view. This variety is at present not much known, but it cannot be too highly recommended as a singular, effective, and ornamental shrub.—*The Garden.*

CALOPHACA WOLGARICA.—This is a pretty little shrub with pea-shaped yellow flowers, which are very attractive, as are also the red colored seed-pods. In its ordinary state it cannot be regarded as a weeper, but when grafted about four or five feet high on Caragana arborescens it forms a pleasing object. Its branches do not quite reach the ground, therefore "worked" plants are well adapted for fronts of shrubberies, or for the decoration of rockwork. —*The Garden.*

LILIUM KRAMERI.—This is a beautiful new Lily from Japan, recently figured in the London *Pomologist and Florist.* It is not clear whether it is a hybrid, an evolution, or an original species. The flower figured is about six inches over, and of a beautiful rosy tint, with orange red stamens.

DOUBLE LILIES.—There have been double kinds of Lilies known for some time. The Double Tiger Lily is always appreciated. We understand a double Lilium auratum has appeared in England.

DOMESTIC INTELLIGENCE.

THE ARNOLD ARBORETUM.—Mr. Arnold, who died a few years ago, at New Bedford, left a large bequest to Harvard University for the establishment of an Arboretum. It has finally been decided to locate this Arboretum on the Bussy farm, about ten miles south of Boston, where the School of Agriculture is already under way. The details of the work are to be under the immediate control of Prof. Sargent, who is eminently well qualified for it. He proposes to lay out the ground (137 acres of well-diversified land) as a natural park, with drives and walks tastefully arranged, and leading from one family to another, in scientific order, of all the trees and shrubs hardy in this climate. It will be the work of more than a single lifetime to complete the arrangements contemplated, but it will not be long before the Arboretum will assume a useful form.

The ultimate result will be so important, whether we have regard to the pleasure or to the instruction of those who may be able to visit it, that we trust all who are interested in the advancement of scientific horticulture, will give this beneficent enterprise the encouragement and assistance of their best efforts and sympathy.—*Agriculturist.*

THE FOREIGN FRUIT TRADE—INTERESTING STATISTICS—THE EXTENT OF THE BUSINESS.—About sixty-seven years ago a small schooner, the *Reynard* by name, (not in the least suggestive of impossible fruit,) met on the broad seas three French frigates. One of them was Jerome Bonaparte, coming to Baltimore, and perhaps in consideration of the alliance possible with Miss Patterson, the gallant master of the *Reynard*, Capt. John N. Chester by name, presented the future King of Westphalia with some bunches of bananas, some pineapples and plantains. This is recollected in the old annals of the fruit business as the first regular importation of West Indian fruits to New York. On the arrival of the schooner, destined to inaugurate the great fruit trade, what she had of these tropical productions were disposed of to Anthony Crappon, fruit-dealer in the old Fly Market, at the foot of Maiden Lane. Do you doubt the fact? There is still a worthy resident of Brooklyn, now in his eighty-second year, who can vouch for the story.

Commencing in a small way, even twenty-six years afterward, it had but little augmented, for then the whole capital in it did not exceed $20,000. Gradually it assumed larger proportions, and to-day we are assured that no less than $4,000,000 are actively employed in supplying New York alone with oranges, lemons, limes, shaddocks, pines, bananas, plantains, cocoa-nuts, derived from Messina, Palermo, Valentia, Malaga, Baracoa, Honduras, Granada, Carthagena, from Kingston, Jamaica, Cuba, the Bahamas, and from Savannah, St. Augustins and Tampa Boy. Steam-power now brings the luscious fruit to us from all parts of the world, and sailing vessels which a year or two plied constantly, now find their occupation fast going. It seems curious to be able to count the oranges and lemons brought to this port during the year 1870 from the Mediterranean, but 94,772,125 of the former, and 93,262,750 of the latter is the tally. We might, if we chose, give the exact figures of the more insignificant lines from the West Indies, but we are content to gross them, simply stating that the most exacting must be satisfied with the data of 593 barrels.—*New York Times.*

DANDELIONS.—In some way or another every one knows the dandelion. The child, as soon as it can walk, makes, among its journeys over the earth's surface, a trip to the tempting yellow blossoms. As it grows older, it blows away its feathery seeds in order to learn "the time of day." The little girls make chain garlands of its hollow stems, and the young student in natural history learns to wonder at the habit of the flower which, in fading, bends flat on the ground, and in a day or two becomes again erect in perfecting its seeds. The student in nomenclature becomes interested in it. He finds its botanical name to be *Leontodon Taraxacum*, and being a Greek scholar he knows that *Leontodon* signifies a lion's tooth; and that the name was given to it from a fancied resemblance in the coarsely toothed leaves to the sharp teeth of the monarch of the feline tribe. The French reduced this Greek name to their own language,

and called it *dent de Leon;* while the English gave it a name expressive of its supposed laxative effect on the human system. By that strange perversity which seems to animate all mankind, the English took to the French name—changing it, however, to "Dandelion," while the French dropped their own and took to the English; and thus throughout France the plant is known as "Pissenlit," a name which is not translatable for ears polite.

Then the medical student has to make his acquaintance with it as *Taraxacum*, and finds that the root is deobstruent, cathartic, and diuretic; and if he is disposed to join the noble army of generous persons who make it the "object of their lives" not to make money, but to relieve the sufferings of humanity, he may perhaps prepare pennyworths' of dandelion root at the moderate price of two dollars a bottle.

But much as we all may know of the dandelion, few are aware of how it is prized in other countries as a salad, and how much pains are taken to improve the varieties. Just now the French agricultural papers are loud in praise of two improvements. The *Pissenlit a cœur plein*, which has a round, full head like a small cabbage; and the *Pissenlit a large feuilles*, which has long, broad leaves like a cos lettuce. Even the English are catching the enthusiasm of their excitable neighbors; for a leading newspaper styles the introduction of these improved dandelions into England as quite an event. They are, it says, the greatest acquisition of the season among salad plants.

It is somewhat remarkable that, with the dandelion growing everywhere in our fields, no attempt has been made by our gardeners to prepare it for salad and bring it to public notice. It requires a thorough blanching to deprive it of its bitterness. It grows at a very low temperature, so that anybody's cellar would properly prepare the plants. The roots at this season may be transplanted thickly into boxes of earth, and these, set in any dark place where there is a temperature of about 50°, will grow and produce a good quantity of white leaves, as crisp and nutty as the finest white solid celery. The various dressings used for lettuce are suited to dandelion.

Besides the excellent salad which this plant makes, the ease which it can be raised at a low temperature, thus enabling the grower to produce it in the winter season, when salad plants are scarce, is much in its favor. We commend the introduction of this plant to our market gardeners.—*Weekly Press.*

VARIETIES OF PEARS FOR DELAWARE.—The pears that seemed to us most promising for orchard culture in Delaware were the Howell, Bartlett, Louise Bonne de Jersey, Buffam, Duchess d'Anjouleme, Seckel, Vicar of Winkfield, Lawrence, Beurre Bosc and Beurre d'Anjou. The last two are not so extensively grown on the Peninsula as the others, but the trees we saw were doing very well, and gave promise of becoming reliable market kinds in that section.—*Horticulturist.*

FOREIGN INTELLIGENCE.

CEREUS GRANDIFLORUS—THE NIGHT BLOOMING CERUS.—How often have I been delighted to visit the collection of the intelligent cultivator of plants, to be warmed by his enthusiasm, to impart mutual instruction, and to share the pure pleasure arising from the contemplation of the floral beauties of nature. When we take a view of the floral display of the vegetable kingdom, how can the human mind be otherwise than interested! The grotesque forms of some excite our wonder, the gorgeous display of others our admiration, the graceful and elegant bespeak our esteem, and the fragile and lowly command our care.

When the magnificent flowers of Cereus grandiflorus are expanded they attract the admiration of everybody; it never opens its blossoms whilst under the direct influence of the sun's rays, and they close never to open again as soon as the beams of the morning sun glance upon

the house in which it is grown. I prefer growing this Cereus in a pot to which is affixed a cylindrical trellis from three to four feet high. The plant can then be moved to the positions in the house best adapted for its growth, or when at rest during winter for the maturition of the sap, and when in flower it may, with facility, be removed to the drawing-room. When in a growing state it delights in a warm, moist atmosphere, where it will lengthen its stems or produce new branches from one to two feet in length in one season. These should be tied to the trellis as regular as the contorted habit and brittleness of the stems will permit. As the stems advance in growth, numerous roots will be protruded from their under side, which will evidently reach the soil in the pot, and they will materially assist in the future growth of the plant and the development of the flowers. As it is no easy matter to remove a plant of this description from one pot to another when once established on the trellis, care should be taken at first, to select a pot of sufficient size.

The soil should be a rich friable loam, mixed with one-third well-rotted and thoroughly dried stable-dung, broken into small lumps, to which should be added pieces of old mortar, to secure a good and sufficient drainage until the pot becomes filled with roots. When the plant has finished its growth for the season water should be gradually withheld, but it is by no means necessary to keep it so dry as to cause its succulent stems to shrivel. It should be placed during winter near the back wall of the house, and that it may have the full influence of the sun the top of the trellis should be about eighteen inches from the glass. As the spring advances the old and well-matured stems acquire a purple tinge, the color being more intense about those parts where the flower-buds develop themselves. About the middle of May small fissures will be observed on the upper part of the stems, from which protrude what at first appear to be small balls of coarse white hair, but in which is inclosed the rudiment of the flower, the enlargement of these balls go on very slowly, becoming gradually more lengthened until they assume a conical shape. At this period the plant should receive a generous treatment, a more liberal supply of water may be given with occasional applications of liquid manure. The foot-stalk of the flower will now grow rapidly until it attains the length of from seven to nine inches, when it will appear as if covered with scales, bristled over with hairs. From the middle to the latter end of June the first flowers generally expand, but much depends on the previous brilliancy of the weather. The flower usually begins to open about 5 P. M., but in dull weather it may be as late as 8 or 9 o'clock. It is an object of interest to the curious to watch the progress of the expansion of the flower. The calyx or outer segments may be seen to move with a start or spring. Now one, then another, until they are free from each other; they afterwards expand imperceptibly, each segment standing apart and their points slightly recurved, forming a circle from eight to ten inches in diameter. In the meantime the petals slowly expand, and are disposed in the shape of a bell at the tops; but they gradually lessen downwards like a funnel, at the bottom of which is inserted the numerous stamens. These are beautifully arranged around the corolla, but the greater part lay on the under petals and surrounding the pistils. The time from the commencement to the full expansion of the blossom is from an hour and a half to two hours; the appearance of the flower is peculiar and grand; the numerous narrow segments of the calyx, which are yellow inside, appear like rays surrounding the corolla, which is itself a pure and delicate white, changing to green towards the bottom of the tube. It possesses a perfume which will fill the whole house in which it may be grown in. The plant, after the flowering season is over, should have a short period of rest to recover its exhausted energies, and should be afterwards stimulated with a moist and high temperature to promote its growth, and to fill its sap vessels with nutritious sap, to be elaborated in due time for the production of its splendid flowers.—*Gardener's Record.*

MR. ROBERT FISH.—Many of our readers have never heard, perhaps, of this great horticulturist, but there is so much to encourage young gardeners in the *Gardener's Chronicle* notice that we give it entire:

Robert Fish, gardener to George Sowerby, Esq., Putteridgebury, Herts, died early on the morning of Thursday, October 23d, 1873, in the 65th year of his age. He had been ailing for some time, still a fatal end was not anticipated; and his sudden decease will come as a surprise to most horticulturists. Few men were more widely known, or more generally esteemed, than Robert Fish. Possessed of such rich stores of knowledge, gleaned with an industry that never

flagged, nothing seemed to give him so much pleasure as the distribution of his abundance to others. No sooner was a horticultural periodical—the first of its class—established by the late Mr. Loudon, than Mr. Fish became one of its contributors; and from that time till the pen fell from his grasp by partial paralysis, he continued to wield it. Years ago he did much good work for the *Gardener's Chronicle*, the *Gardener's Journal*, and for many years he has been on the staff of the *Journal of Horticulture;* and his pen, his power, his purse, have ever been ready to advance horticulture or help horticulturists. And yet all his writings were the result of the husbanding of the fragments of his time. For the last thirty-six years his life-work has been the forming, furnishing and adorning the gardens of Putteridgebury, and he succeeded in raising them to fame as among the best illustrations of gardening in the country. He especially excelled in flower gardening, and there are few, if any, gardens in Britain which could exceed that at Putteridgebury in the luxuriant wealth of its masses and the grand effects of its coloring. Mr. Fish was an example of what a young man without any special help from fortune may become. At school, in the village of Scone in Perthshire, he was distinguished for his diligence and thirst for knowledge, and to the last he never thought his education finished. Self-culture followed school teaching. Few men valued their time more. In early life he was a great reader—a taste doubtless fostered by his taste of the classics at school. But he went early as an apprentice to gardening in the gardens of the Earl of Mansfield, at Scone Palace, Perthshire. In those days work was heavy, and sympathy and encouragement but scant for young gardeners. But the young apprentice read at meal times, and far into the night, and laid the foundation of that culture, sweetness, and light, to use Matthew Arnold's words, that distinguished and helped him to be what he was through life. The same course of study and reading were pursued at Valleyfield Caenwood, Shuckburg, and Chiswick, whither the young gardener went in search of a thorough knowledge of his business. Robert Fish first became a master gardener at Hyde Park Corner; close to the Ring where the Messrs. Tattersall have ruled over horse-flesh for so many years he began the practice of the art he had learned—learned with so much diligence. Few places could be more unpromising to a young horticulturist; but he looked upon difficulties as made to be mastered, and he went on mastering them for years, to the entire satisfaction of his employer, the Mr. Tattersall of forty years ago, and to the surprise of many who went to see for themselves.

It was at "The Corner" that Robert Fish made his *debut* as a public writer. Here he also formed many valuable friendships that only ended with his life. Perhaps the most influential on his own career was that of the late Mr. Loudon, who encouraged the young gardener by his warm friendship, and invited him to try his wings in the *Gardener's Magazine.* At that time, too, he had many ideas and plans about the elevation of horticulturists, hence his origination of Mutual Improvement and other societies. He had an intense love of knowledge for its own sake, and also for its influence on the character and *status* of those who possessed it. No man was more jealous for the honor of the cloth, none had a warmer regard for every true gardener. To the whole craft his heart was open, and to the last he continued an enthusiast in his profession. He even wished to retire, not because it was to his interest to do so, quite the reverse, but in case the gardens should suffer through his illness; and it was not till his employer assured him again and again that he had never been better served, and that the garden could not look better, that he consented to remain in his place.

Robert Fish did much to live down the mischievous fallacy that a good writer must needs be a bad gardener. Practice, with writers like him, precedes the writing. Week by week he simply cut a sheet from his own doings of the week and had it printed. And so of other matters; the man who can point out to others the why and the wherefore of things, is surely by that very process the better qualified to understand and do them himself. To the last the deceased's practice was abreast of his teaching. And now, after life's not fitful fever, but earnest work, he sleeps well in the quiet parish churchyard of Lily—fit name for such a lover of flowers. The whole of his family, from the most distant parts of England and Scotland, with the manager of the estate, and its owner, George Sowerby, Esq., gathered around his grave last Monday—the latter further testifying his esteem by burying him at his own expense, and proposing to commemorate him by a suitable memorial. Better advice could hardly be given to gardeners, young and old, than to copy the example and imitate the useful life of Robert Fish.

HORTICULTURAL NOTICES.

MASSACHUSETTS HORT. SOCIETY.

The transactions for 1873 are before us, and give a prosperous account of this excellent institution. We note as among the matters of general interest, that both Mr. Hovey and Mr. Wilder are working among seedling Camellia raising. Mr. Wilder is already distinguished in this line. Among the "best" roses for buds, we note that Boston does not wholly praise Bon Silene, but places Marechal Neil, Isabella Sprunt, and Climbing Devoniensis, high up on the pinnacle of fame. E. S. Rand, Jr., is described as being an exhibitor of magnificent orchids; and Govenor Clafflin appears as a generous patron of Horticulture. Jackson Dawson is said to have exhibited at one of the meetings a double form of our common "high bush blackberry," *Rubus villosus*. If this is correct it is the first knowledge we have had of a double form of this species. The beautiful California bulbs which we often read about, appears to be getting well into cultivation by Louis Guerineau. He exhibited Calochortus elegans, and C. pulchellus, and also Milla pauciflora. Other California bulbs, Brodiaea coccinea, and Cyclobothra alba. Mr. Rand also exhibited a new hardy shrub from Japan, Rhodotypus kerrioides, which has large white rose-like flowers. This ought to be a good addition to our hardy shrubs. Much attention is given in Boston to hardy herbaceous plants and ferns, of which copious lists of the best are given. The whole report of the Floral Committee is well arranged and very instructive. The Fruit Committee also make a valuable report. Peach buds were killed by the winter's cold; but (the lowest 15 below zero) the effect on other fruit was not perceptible. Some new or rare strawberries were exhibited of which a large dark red Cockscomb variety, Defiance, is spoken well of, though in quality "too much like Wilson." Colonel Cheyney seems to be the favorite of all exhibited. Others named are Matilda, Kissena, Champion, Emma, and Late Prolific; but the committee express themselves tenderly in regard to them. Of quite new varieties "Belle" is said to be the largest ever placed on Boston tables, and it has "no bad taste." Augusta is regarded as of the highest promise. Of cherries, Black Eagle, Black Tartarian, and Downer, seem still to rule the roost. In currants none "on the whole" beat the old Red Dutch. In the blackberry line, Boston finds herself to stick by the Dorchester still, in spite of the efforts of new varieties to obtain the first place in her affections. Apricots have disappeared from the tables, and plums are fast following suit. Forcing peaches are growing in popularity. Hale's Early from the open air of Boston on the 30th of August is considered well done. Of apples not well known out of the east, high praise is given to Hunt's Russett, an excellent keeper,—exhibited May 10th, 1873. It is handsome, and of the highest quality. The variety is a native of Concord, Mass., and is over two hundred years old. The committee says the Fall orange of Downing should be a synonym of Holden pippin.

Among pears Josephine de Malines is regarded as the best for prolonging the pear season. Beurre d'Anjou were exhibited in fine condition so late as February 15th. The Andre Desportes is regarded as a probable competitor of Buerre Giffard, and Souvenir de Congress of the Bartlett. Mount Vernon is still healthy and every way excellent. In regard to the seedlings of Mr. Fox, of San Jose, the committee says most of them bear a striking resemblance to well known kinds, and they suspect Mr. Fox is mistaken in his account of their origin. The meaning of what the committee says is not clear; but we suppose that they mean that they are not seedlings of Belle lucrative, as Mr. Fox believes.

A large number of new grapes have been exhibited of marked promise; but as so much depends on the vine itself, of which the committee cannot judge, they are properly guarded in their commendations.

The Vegetable Committee make a brief report. In peas Mr. J. A. Law made excellent exhibitions. William the First was regarded as the best. It is early, large pods, and well filled. In tomatoes the Canada Victor conducted itself with great credit to all concerned. An egg-plant called the Black Pekin, is commended as having some good points.

The Society is in a very flourishing condition, and Mr. W. C. Strong, the President, may well be proud of its continued usefulness.

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DEVOTED TO

Horticulture, Arboriculture, Botany and Rural Affairs.

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HINTS FOR MAY.

FLOWER GARDEN AND PLEASURE GROUND.

In conversation with one of our most popular Lyceum lecturers recently, the exhaustive character of brain work came up. Our friend is one of America's favorites, and when he is announced to speak, he is always sure of a full house. He is not yet much over middle age, but he feels how heavy is the draft of two or three lectures, of an hour and a half or so, a week, and "though he was very particular about his diet," he feared he could not stand the strain much longer. On further inquiry, the diet was found to be, cracked wheat for breakfast, and similar but not much stronger food for all of his other meals. He was astonished at the suggestion that that sort of thing would necessarily make poor preaching. Brain work needs food. It is not a purely mental effort. It takes something to eat to make one think well, as well as to make one work well. Still, our friend was not satisfied about this—wheat with the bran on, or wheat with the bran off: cracked wheat or ground wheat, boiled wheat or baked wheat: tea without or with sugar, and tea with cream, with milk, or raw tea. These, and scores of similar questions were with him essential to a correct idea of good brain capacity for work, and he loved to discuss nothing seemingly so much; and he was somewhat shocked when we gave it as our candid opinion, that if a man was physically healthy, he could lecture every day through on a regular daily dinner of pork and beans. Now, what we believe to be true of men, we believe to be equally true of plants. It makes very little difference to a healthy plant what its food is, yet people ask us every day whether this manure or that manure, is not good for this flower or that tree, as if one had to arrange various soils to suit various plants, as we would mix ingredients in a doctor's shop. When a plant is in weak condition, strong manures are dangerous, but when healthy they take to anything. Still, some plants have some food they prefer.

Leaf mould is good for flowers if two or three years old, and very much decayed; when but half rotten it is an injury. Rotten sod is the best soil for flowers; and cow manure, which has lain two years to rot, the best fertilizer. Where rotten sod is not easily obtained, the edging parings of walks may be preserved in a heap for flower purposes.

In planting out flowers, don't take them at once from the hot-house to the open ground, set the pots out for a few days in a cold frame with plenty of air, or under a tree in a sheltered place. Before turning them out of pots, water; and when set in the earth, press the soil very hard about the flower roots. If the ground be dry, the earth cannot be pressed too hard.

Don't make the beds very high, or the rains in summer will run off too rapidly. After smoothing the surface, peg down the plants as much as possible, so as to cover the surface soon. The plants also push out side shoots easier. Where small twigs can be had, split and double them like hair pins, for pegging down; where these are not at hand, small pieces of bast mat or twine, doubled and dibbled in the earth by the ends, make very fine pegs.

Climbing plants grow faster on trellis than if

left to themselves; stick them in as soon as the climbers are set out.

Tuberoses, Gladiolus, Tigridias, Dahlias, and other bulbous things which cannot be put out till the ground keeps warm, ought not to be kept out of the earth any longer than necessary. It was once supposed they thrive best in poor soil —an error: they love rich food.

Mow lawns very early the first mowing; or at every subsequent mowing, the lawn will look brown: a thin sprinkling of salt is good for the lawn, just enough salt to see the grains on the surface about a quarter of an inch apart. An over-dose will destroy the grass. Frequent rolling is one of the best ways to get a good close sod. When coarse weeds get in the lawn, hand weeding is the best remedy.

FRUIT GARDEN.

Handsome forms are as desirable in fruit as in ornamental trees. No winter pruning will do this exclusively. It may furnish the skeleton, but it is Summer pinching which clothes the bones with beauty. A strong shoot soon draws all its nutriment to itself. Never allow one shoot to grow that wants to be bigger than others. Equality must be insisted on. Pinch out always as soon as they appear, such as would push too strongly ahead,—and keep doing so till the new buds seem no stronger than the others. Thus the food gets equally distributed.

To get good fruit you must manure well, and we are often asked whether *this* is not best, or *that* is not better, or something else best of all. But, really, any fertilizing matter is good. Old decayed stable manure satisfies us for everything; but do not forget what we have often said about digging among the roots. *Don't do it.* Surface manuring is daily adding to its advocates; but in particular amongst fruit growers; and no fruit, probably, blesses the surface manurer more heartfeltedly than the Raspberry. Put a few inches of rich, rotten stable manure about your Philadelphias, and you will not think them much inferior to the reputable old kinds like Brinckle's Orange, Antwerp, etc.—at least we don't.

Where water can be commanded, there is nothing so profitable as to well soak the soil about small fruits; first about the time that they have set their fruit. Much of the value of this operation, however, will depend on the nature of the soil. The advantages are least in a tenacious, and greatest in porous soil. It is said that an animal derives most benefit from food when it is hungry before it begins to eat; it is certainly so with plants. Water applied to soil already wet is an injury; and water never has so telling an advantage on vegetation as when every leaf is about to wither up for the want of it. A plant that never seems to want water is in a very doubtful condition in regard to its health.

Blackberries and raspberries, set out in spring, may kill themselves by overbearing. It is pardonable to wish for some fruit the first year. If a tree seems to be growing freely, some fruit may be left. Cut out black-knot, or any symptoms of disease that may appear, and *as* they appear in plums and cherries.

VEGETABLE GARDEN.

Surface manuring, so valuable for fruits, and herbs grown for their grain, has not been found so advantageous for those crops which require great succulence to give them value. Hence, for Cabbage, Celery, and such, it is better to dig in the manure, and keep the surface soil as freely stirred and deeply hoed as you please.

There has been quite a stir the past few years in new vegetables, and this year will be an important one on the fate of many new kinds. Peas, potatoes and tomatoes are particularly interested in this season's results, for many will, no doubt, sink hereafter into oblivion, or something worse. In testing things, however, let our friends remember that the last is often first, and the first last. We often read that that or this is good for nothing. It was planted a week sooner, and yet came in afterwards. Vegetables are not like horses, where the odds of time are in favor of winning. A plant early set often gets stunted and has to rest like the hare in Æsop's fable, and the really and truly slow-poking tortoise, under such circumstances, may go ahead and win. Let all your plants start fair together.

Cabbage, Cauliflower, and Brocoli are now set out for fall crops, and Endive sown for winter salad. Lettuce, also, for summer and fall use. This, however, must be sown in very rich soil, and in a partially shaded situation, or it will go to seed. Peas, beans, and other crops should be sowed every two weeks. They do much better than when a large crop is sown at one time, and then have too many on at one time to waste.

Melons, Cucumbers, Corn, Okra, Squash, Beans, Sweet Potatoes, Lima Beans, Pepper, Egg plants, Tomatoes, and other tender vegetables that do not do well till the sun gets high, and the ground warm, should go into the soil without delay.

Bean poles should be set before the beans are planted; and near cities where they are comparatively high-priced, their ends should be charred. This will make them last some years.

Many now find it pays to grow plants especially for poles. A waste piece of ground may be set with Willows, Paulownias, Ailanthus, or any fast growing trees which can be cut every second year.

COMMUNICATIONS.

ORCHIDEÆ NO. 14.

BY JAS. TAPLIN, MANAGER TO GEO. SUCH, SOUTH AMBOY, N. J.

WINTER BLOOMERS.

In answer to various inquiries, a list, with a few remarks on winter blooming Orchideæ, will be of service to your readers. This list will include those grown and flowered by myself during the last winter, and those in flower at the present time up to the end of February. I will place those flowering before and up to Christmas at the head of the list.

Cypripedium insigne was very fine for two months before Christmas, and I cut about four hundred flowers at that time. They would have lasted for some time longer on the plants. Cypripedium venustum at the same time.

Cypripedium Rœzeli has been in flower for about six months, and will continue for a month or more longer. This is one of the expensive species. Lælia anceps, a splendid species. I cut twenty dollars worth of flowers from one plant of this at Christmas. This will last for six weeks in flower.

Lælia acuminata.
" autumnalis.
" albida all fine winter varieties.
" superbum, a splendid kind, usually opens its flowers about the new year.

Lycaste Skinneri, in many varieties, flowers all the winter. One of the best cool house Orchideæ.

Lycaste macrophylla,
" xylophora, both good winter bloomers.
Catleya Warzewiczi delicata,
" Trianæ, in many magnificent varieties.
Phalænopsis amabilis,
" grandiflora. These are in flower nearly all the year.
Phalænopsis Schilleriana will continue in bloom until March.
Dendrobium macrophyllum giganteum.
" Pierardii.
" " latifolia.
" aggregatum.
" nobile.
" pulchellum. All these are fine.
Epidendrum cileare, an old, neglected species, but very useful for bouquet making.
Angræcum eburneum.
" bilobum.
" sesquipedale. All beautiful white flowers, lasting long, but very expensive.
Vanda tricolor.
" suavis. Both fine. Require strong heat.
Brassavola nodosa.
" glauca. Very fine. Last a long time.
Odontoglossum pulchellum.
" Bictonense.
" Wallichii.
" cordatum, and several new species. These are all coolhouse Orchideæs.
Oncidium Cavendishii.
" ampleatum major.
" spachelatum.
" Wallichii. All free bloomers.
Goodyera discolor—Very pretty when well grown.
Chysis bracteatum—Lovely for wedding bouquets.
Chysis Limminghi.
Cœlogyne cristata, one of the best coolhouse Orchideæs.
Dendrochilum glumaceum.
Schomburkia undulata, very fine.
Cymbidium pendulum.
" alœfolium,

" giganteum.
Trichopilia suavis.
" tortilis.
Sophronitis cernua.
" grandiflora.
" violacea. All beautiful bright colored flowers on very small plants.
Sobralia decora.
Calanthe Veitchii, splendid.
" vestita lutea.
" " rubra.
Phajus grandiflora.
" Wallichi, both good old fashioned plants. Can be grown in any ordinary plant-house.

By this list it will be seen there is a good variety to be had in flower at a season when such flowers are of most service.

PRUNING TO FORM, AS APPLIED TO THE APPLE TREE.

BY GODFREY ZIMMERMANN, PINE HILL NURSERIES, BUFFALO, N. Y.

So much has been said and written about the form of the apple tree, that it seems almost as a universal acknowledged law that *that tree must have an open vase, or like an vpturned umbrella-shaped form*, and he who undertakes to say the contrary must appear like a heretic. Nevertheless since every thing has two sides, I venture to make a few objections to it.

1st. It is natural for that tree, if left to itself till it comes to maturity, to never assume that form, but rather the reverse.

2d. The idea to give the tree in that form more light and air, seems to me more imaginary than real; for the natural roundish shape brings more surface to the sun than the hollowed out form.

3d. After the tree is cut out to this form, it is constantly taxed to *fill up* the gape, and the industrious pruner must be always on the alert to *clear out*. This I call a murderous war on the vitality of the tree, under which it successively succumbs. Instead of pruning to *assist* nature, this *form of pruning* is with most pruners the all absorbing idea of the operation. Stunted branches, of which the tree ought to be relieved by removal, are left, if it happen that they be in the circle of outward standing branches, selected to make the frame; and the most thrifty branches are cut out if they be in the way of the ideal form, and the sagacious pruner removes every little side branch as far as he can reach up on these main branches, by which they are weakened, instead of growing thicker and stronger down to the base, where they start from the body of the tree. The first heavy crop bends them out and downwards; the unprotected bark gets hard and scorched by the sun, causing the circulation of the sap to stagnate, and numerous sprouts to spring up, to the great annoyance of the form pruner, and the battle with the life of the tree has begun.

I do not wish to be understood to be against all artificial forms or certain desirable shapes in cultivated garden trees, but I am much against the attempt to produce them in the orchard, planted for profit, by mere rude pruning. Any form that necessity or fancy may dictate, can be produced by constant attention, and applying all the principles and rules given for that purpose, and this only by an experienced hand.

Your well given answer to an inquirer in a late number of the *Monthly*: "*Why prune at all if they are growing finely*," should be written on large labels and stuck up in every young orchard; and if duly respected, would do more good than all the tons of paper used up for pruning directions. Applying the knife to thrifty young trees does about as much good as giving medicine to a healthy and robust person to make it still more so.

Now, Mr. Editor, this article is longer than it ought to be; but I could not help it, for I am about in the same fix when on this theme as our friend H. E. Hooker, when he stated at the last horticultural meeting at Rochester, that "he cannot find words enough to express his dislike about the habit of pruning evergreens in all kinds of unnatural shapes and forms." So please *prune in*, and *cut out* all the weak and superfluous branches, and the shape will be improved without disturbing the circulation of the sap or endangering the vitality of the tree.

TREE PEDDLERS.

BY *, ROCHESTER, N. Y.

In an article which appeared in the January number of your valuable paper, Rustic undertakes to exonerate the Tree Peddlers. On careful reading of his efforts, I find a great many errors in his statements. His anecdote of the lawer's client may be all well and good, but I claim that the *Tree Peddlers*, not agents of reputable houses, are much to blame. I have some experience with them, and find them on the whole not to be strictly honest, and will give the following instances in corroboration of my assertions:

A Tree Dealer or Peddler comes to a nursery and inquires the prices of apple trees, named varieties, per thousand; he is informed of the price. He then inquires the price of apple trees, unnamed varieties, in fact regardless of varieties; he is informed of the price, which price is very much lower than the previous price given, in fact being sometimes from 10 to 15 per cent. lower. He then gives his order for so many thousand trees. He may require Baldwin's for one order, and may not have any in his purchase, or rather he may have them, but will as likely put in a summer apple in its stead, for all he knows, and of course labels them Baldwin's. In roses how many times do they substitute, and what kinds do they give, it is absolutely ridiculous.

I know of one instance which occurred not long ago. One of this gentry called on a lady, and sold her a black rose, a new thing, at the very moderate price of $2.50 for one single rose bush. In due course of time he made his delivery, and handed her a very new rose indeed, the Aureti. Was not that swindling in the highest degree? The same may be said of all other stock. I could write a good deal more on this subject, but I think the above will be sufficient to give an idea of their doings. They are for making money, regardless of honesty or any thing else. Of course there are exceptions, but these are few and far between. They buy where they can get the cheapest, and are reckless about varieties they get.

[As peddlers in perhaps every branch of trade do. No one expects to get first-class goods of any kind from any sort of peddlers, yet we cannot but think that though a large number may sell wooden nutmegs, some deal in the real thing.—ED. G. M.]

HARDINESS OF PLANTS.

BY W. C. STRONG, BRIGHTON, MASS.

Interesting as it was to read the enthusiastic descriptions of your distinguished English correspondent, concerning the great varieties of Ivies, it was also a serious detraction to know that we, in this country, cannot enjoy them in their luxurious perfection. Mr. Hibbard must, in some small measures share our feeling, from the fact that even he cannot transfer in perfection the lobes and the veins, the gold and silver and bronze characteristics from the moist shade of the Snowdon Hills to the drier regions of Stoke Newington. The inference is very plain from the tenor of Mr. Hibbard's article, that the Ivy is much affected by soil and position. He speaks of one variety as tender in clay soils, but absolutely hardy in a sandy or limestone soil.

In your notes, Mr. Editor, you say that "at Boston it lives out in no aspect." This is practically true, yet the exceptions are so suggestive that you will allow me to call attention to them.

Many persons familiar with Boston, will recollect a three or four story brick house in the city of Charlestown (now a part of Boston), the north-west wall of which was well covered with English Ivy nearly to the ridge. It retained its color well throughout the winter, though exposed to the north wind. It had not the advantage of a compact city and surrounding walls, but was fully exposed, except towards the south. If my memory serves me, the sun could not strike it at all during the winter months, and only obliquely during the summer.

Doubtless Mr. Hovey will recollect other specimens of Ivy which have endured our winters upon open walls. This one was certainly very conspicuous and fine. The late Joseph Breck also had a fine specimen of H. palmata (digitata of Mr. Hibberd) growing on the north-west brick wall of his greenhouse. It has retained its foliage, and suffered but little in ordinary winters.

Now if the question were asked, will the Ivy endure the winters of Boston? should not the answer be, yes, under proper conditions? Does not the fact that it has again and again climbed to the top of high walls, and endured a full exposure to the northern blast, prove that it is able to endure the cold when in perfect health? Are the Canadian Hemlock Arborvitæ hardy around Boston? and the American Arborvitæ? We may answer yes, or no, according to conditions. And so with a multitude of plants. If we can secure the proper soil and the proper position for healthy summer growth, and the proper protection from the sun, or from the wind, as varying cases may demand during the winter, we shall find our list of hardy trees and plants has largely increased.

It is by no means conclusive that plants are tender because they have been winter-killed here and there, generally. Neither is it safe to follow the lists of experimentors, until we know

that the various conditions have been pretty generally tried. In a multitude of cases the ability to withstand our cold winters, depends entirely upon the summer treatment.

The European Ivies, and perhaps the English Hollies, may be extreme illustrations of what it is possible to do by tempering the dry heat and scorching sun of our summers, in order to secure a vigorous but mature growth, which, under favoring circumstances, may endure the winter's cold.

GUNNERA SCABRA AND MANICATA AT L. VAN HOUTTE'S, GHENT, BELGIUM.

BY A. M. C. JONGKINDT CONINCK, DEDEMSVAART, NETHERLANDS.

Those who visited this wood-renowned establishment during the summer, will probably have stopped to examine and admire, with enthusiasm, the enormous and beautiful specimens of Gunnera there produced. Many, however, not having the opportunity of seeing them, may be interested in a few particulars and description of these first-class ornamental plants.

Gunnera scabra.—At a distance of about 20 feet from each other ten beautiful plants are to be seen, the largest of which—ten years old—covers a surface of 14 feet across, and attains a height of 7½ feet. The diameter of the leaves is 4½ feet; the length of the petioles 5 feet. Twelve flower-spikes of about 2 feet in length and 6 inches in diameter, may be observed on this plant. As is well known, these spikes are of a conical form, and of a greenish-brown color; generally the flowers are hermaphrodite. It is a native of Chili.

Gunera manicata.—A not less beautiful specimen may be seen close to that of G. scabra. It is five years old, and bears three flower-spikes. Its leaves are about 1½ foot across. The length of the petioles is 3 feet.

G. manicata differs considerably from the first named, especially in the flower-spikes, the lateral peduncles of which are 3½ inches long, whilst their diameter is only 1-15th of an inch. The color of the flowers is reddish brown. G. manicata was first introduced to us from Brazil. As both of these plants grow in the marshy parts

GUNNERA SCABRA.

of the above-mentioned countries, they require a great amount of water to fully develop their growth.

FREEZING OF SAP IN PLANTS.

BY REV. L. J. TEMPLIN, KOKOMO, IND.

This subject has been the fruitful theme of considerable controversy among vegetable physiologists for more than a century. The question is, does the freezing of the sap in a living vegetable necessarily result in the death of it? On the affirmative side of this question we find such names as Hunter, Goeppert, Mohr, Meehan, and others, eminent for their knowledge of the vegetable kingdom. On the negative side we find such men as Halder, Le Conte, Poey, and others.

It will be seen that the weight of authority is quite well balanced, and of course when this has been made the subject for discussion, it has been conducted according to the highest rules of art. Yet I regret to have it to say, that on the part of some, the question in dispute has been assumed as settled in accordance with their own views, and they have manifested an impatience toward the opinions of those who hold contrary opinions, unworthy honest searchers for truth. No dogmatic assertion can settle a question of fact like this, so long as further investigations can be made, however high the authority that makes it. That forest and other trees do survive the cold of the most vigorous winters is an undeniable fact; it is therefore necessary for those who hold that freezing necessarily results in death, to show that the trees pass through all this hard freezing without being themselves frozen. How is this done? Two reasons are given why the sap does not freeze. The first is: "That the sap holds in solution certain mineral salts and other materials of plant food, and that the presence of these, or the viscosity resulting from their presence, gives it the power of resisting great degrees of cold without congelation." Does this exemption from freezing follow the compounding of these ingredients? If so it should characterize it when out of the tree, as well as when in it. What is the fact in the case? If a quantity of sap is drawn from a tree and exposed in a vessel to a temperature below the freezing point, it will freeze nearly, if not quite as readily as will rain or well water under similar conditions. This was proved by Hunter, and has been observed by every maple sugar maker in the land.

The second reason given why sap in plants does not freeze is, "that the sap is so minutely divided in the capillary vessels and cells of the plant, that it will not and cannot be congealed, at least until it reaches a point that will destroy the life of the tree or plant. On this I offer the following observations: 1st. If this be true the power of every plant and tree to resist cold would be in exact relation to the size of its sap vessels. That this is not the case is proved by facts on every hand. The oak has larger cells than the peach, and the hickory or ash than the apple, and yet the peach and apple are frequently killed by tens of thousands, while the oak, ash and hickory are entirely uninjured.

2d. If this doctrine were true, it would follow that each species of tree would be able to endure cold to a certain degree beyond which to go would be death. By consulting the thermometer it would be easy to determine the effect a cold snap has had on our trees. But that any such unvarying results follow the effects of freezing no sane man will assert. It is a well known fact that the same species of trees will sometimes succumb to cold many degrees higher than that which they have at other times endured without injury. Indeed it is sometimes the case that trees and plants are killed when others of the same variety, under apparently the same conditions, escape unharmed.

3d. Any one, who will take the trouble to examine a sound log of timber that has lain for some months in the weather, after several days of hard freezing, will find it hard frozen. Its cells are the same in size they were while it was a growing tree, and if the mere size of these cells prevented the sap from freezing in the tree, the same effects should exist in the log.

I now wish to call attention to a few facts that have come under my own observation, and that seem to me to prove that vegetation may, and does, often, survive actual freezing of the sap. And here I wish to refer to a case to which I alluded in an article published in the *Rural New Yorker* last spring, the principal part of which was copied into the June number of the *Gardener's Monthly*. I refer to the case of a frozen turnip.

A pit of turnips that has been covered with some inches of soil, and yet not sufficient to exclude the frost, may be opened, and every turnip will be found frozen almost as hard as so many balls of solid ice. If scraped with a knife they will be found full of minute particles of ice.

If thawed in a warm atmosphere, or warm water, their structure is disorganized, and they become soft and spongy. Now this all proves to me that they were "frozen solid." But, if instead of taking all out of the pit, a part are left in and covered up with soil till the warm weather of spring, and then taken out and planted, they will grow and produce seed. These are facts that I and thousands of others in the country have often observed. That they were frozen is proved by the condition of those taken out and thawed, and that freezing did not destroy their vitality is evident from the fact that those that remained in the pit till spring did actually grow.

Small turnips often survive all the freezing of winter where they grow, and shoot up and grow vigorously in the spring. Do they not freeze? If they do not, then it is impossible for a vegetable to freeze. I have also known cabbage plants to endure the weather of a cold winter without protection, and grow in the spring. The leaves often become so stiffened by the cold that they will break like thin plates of ice, yet their vitality survives it all. I have observed the same in regard to other species of the *Brassica* family. That too, in the absence of any coating of ice on the surface.

The condition of timber is so changed by exposure to continued freezing weather, as to give it an entirely different consistency. Its degree of solidity and resistance to cutting tools are very greatly increased. Some species of timber cannot be successfully cut with a saw when thus frozen. This frozen condition is revealed to the experienced woodman at once, on striking his axe into a tree when in this state. During the present winter I have made special examination of pieces of wood cut from the north side of different trees, after several days of hard freezing weather. I took a piece and exposed it to a temperature above the freezing point for a time sufficient to thaw it throughout; I then split it so as to expose a fresh surface, and compared it to a piece not exposed to warmth, and the frozen condition of the sap in the latter was easily detected by the naked eye, especially when held in the sunshine. This was made further evident when it was placed under the miscroscope. Do the above and other similar facts prove that the sap in vegetables may be frozen solid without impairing their vitality? Or are they all to go for nothing in the face of opposing theories? With me they conclusively settle the question, that plants do survive the complete freezing of their sap. My motto is, "take care of the facts, and the theories will take care of themselves."

RUSTIC STANDS AND VASES.

BY F. A. S.

Having frequently noticed the unhealthy and sickly appearance of the plants, in many tastefully arranged rustic stands and vases, before the hot suns of summer yet intervened to parch their roots or curl their beautiful verdant, purple or waving silvery foliage; it has occurred to me that the causes of failure (which are not few) was in the injudicious and indiscriminate selection of the plants for the position in which they were intended to be placed, as much as neglect in the after treatment in properly attending to their wants in supplying them with water, and frequently syringing them morning and evening, for the syringe is certainly indispensable, and its frequent application prevents the pores of the plants from getting clogged with dust, and enables them to exhale noxious gases, and always repays the trouble by their healthy, clean and inviting appearance.

I have filled and taken care of stands, vases, and rustic baskets in different situations during winter and summer; and as these hints are only intended for those not acquainted with the different requirements of plants in the different situations in which they are placed, I have found a compost of old friable loam and leaf mould, with an addition of a little sand and pounded charcoal, to answer as a good compost, with a layer of charcoal (when convenient) for drainage.

The plants that are sure to stand our hot sun in summer are:

FOR CENTRE.

Scarlet Geraniums, single or double.
Coleus Verschaffelti, or its varieties.
Centaurea gymnocarpa.
" candidissima and Achyranthus, in varieties surrounded by Alyssums, Nierembergias, Alternanthera, Cuphea, Gnaphaliums, and double flowering Ice plants, rose and white.

Vines.—Ivies, Senecio scandens, Lophospernum, Maurandias and Manettias, with the outer row Kenilworth Ivy, Moneywort, Vinca variegata, Gnaphalium lanatum and Lobelia in variety, all of which will grow luxuriantly without any extra care, and fully compensate the fair cultivator during the season, and indeed look fresh and inviting in the fall when nature's painter decks the forest in her dazzling and brilliant golden hues.

But if the situation be shaded from the sun's rays from—say ten in the morning to four in the afternoon—we have other gems that will thrive equally as well.

FOR CENTRE.

Fuchsias, Dracænas, Centaurea, Achyranthus, Coleus, Pteris, in varieties, accompanied by Begonias, Ferns, Gnaphaliums, Saxifrage, Torenia, with Ficus repens, Vinca variegata, Tradescantia zebrina, Lycopodium denticulatum and Panicum variegata, with Vines, Ivies,—English and parlor,—Cissus discolor and Smilax. But it is invidious to discriminate among so many favorites. I will leave to others more competent to do them justice, as I feel more in place at the potting bench than the desk. More accustomed to handle the pruning knife than the quill.

WHEN TO PRUNE GRAPE VINES AND WHEN TO COVER THEM.

BY T. J. PITTS, NASHUA, IOWA.

In *The Post*, under the head of "Farm, Orchard and Garden," is an article on "pruning grape vines," taken from the *Forney's Weekly Press*. Now the writer of that article (Thomas Meehan, editor of the *Gardener's Monthly*, and horticultural editor or correspondent of several eastern papers) is, undisputably, one of the very best authorities on horticulture in this country. His article on "pruning grape vines" shows the folly of quoting the authority and practice of southeastern fruit growers for northwestern farmers and gardeners to follow. This writer is seeking to correct those (*perhaps*) eastern papers, which have been advising people to prune their grape vines in the fall. As he says, "few ever do it," and indeed we are not sure that those papers who recommend it ever knew any one who really tried it on any extensive scale. And again, "the writer has to confess he is like all the rest of the world, and prunes grapes after the winter has passed away." Now this may be all true when applied to that part of the world for which the article was written; but for this northwestern part of the world this "pruning grape vine" article needs itself to be pruned—to be taken from and added too—in order to adapt itself to this latitude.

It is certainly true that Mr. Meehan knows that *fall pruning* and *covering* grape vines is *extensively* practiced in the *west*, and is absolutely necessary as a condition to insure success. This has been and is, every year, being proved by the experience of hundreds, and Mr. Meehan so instructs his western subscribers through the *Gardener's Monthly*, and this same article contains the theory favoring fall pruning, which experience, here at last, proves to be the true theory. The writer says, "we know that if we cut a tree down to the ground in the fall, and another just like it in the spring, the fall cut one will sprout stronger in the spring than the other. This is the principle upon which the hedges are managed."

"When one has become weakened, and it is desired by cutting down to make it push stronger from the base, the cutting is always done in the fall. Then we know that moisture is escaping from the branches of trees all winter. And frequently more is thus evaporated than the roots can well supply, and hence it would seem but reasonable that if a good portion be cut away in the fall, there will be so much less strain on the roots for moisture during the winter."

And I would add that another good reason for fall pruning is that it leaves the vines much easier to lay down to cover, and it requires certainly much less covering after one-half or two-thirds of the old wood is removed. I will refer the reader to Mr. Meehan's article for his manner of pruning, which is plain and practical, and will here give my manner of covering vines.

After all the vines are cut loose from the stakes or trellis and are pruned, I gather all the canes of the first hill in row together in one hand, and with the other take some of the straight blue grass, as I prefer hay to straw, in the other, and tie the canes together, bending all to the ground and toward the second hill, and if necessary lay a stone or stick to hold in place till the next hill can be gathered and tied in like manner, bending the same in toward the first hill, and then tie both hills together—which, if the vines be four or more years set, of good growth, at eight feet apart they ought to lap well for tying, and after thus tied together, they will keep in place for covering. After all are thus tied, I cover lightly with course hay or straw, putting sufficient earth on the hay and vines to hold the same in place, and to help protect the same from sun and wind.

This may seem to be too much labor, but when there are many vines to cover it makes a great saving in covering material, and the little extra time required in the fall is much more

than made good by the much less time required in the spring, to uncover and remove the extra amount of litter out of the way of cultivation. Vines thus covered came out this spring all right, and bore a heavy crop of fine fruit, whilst vines left uncovered were nearly in every case badly damaged and most entirely killed out.

[The above from the *Nashua* (Iowa) *Post*, we have been asked to transfer to our columns, which we do with pleasure. It contains some excellent practical hints from one of the best cultivators in the west.—Ed. G. M.]

NATIVE FERNS.

BY J. WARREN MERRILL, CAMBRIDGEPORT, MASSACHUSETTS.

In your number for December I asked if any of your numerous readers could put me in the way of procuring four ferns, which I named. The kind response which I received, from many persons, to me unknown, has convinced me of a wide-spread interest in the "flowerless plants"; and although the communication was made at an unfavorable time of year, it resulted in procuring for me two of the four kinds which I had all summer tried in vain to secure. This induces me to say that I have been for some time making a collection of *native ferns*—not of the fronds in an herbarium, but the live plants—and have, I think, sixty-nine varieties this spring in fine growing order. There are, however, according to a list recently published, one hundred and thirty-eight varieties in the United States and the British Provinces; so that I have but one-half of them. I can think of no way to secure any considerable number of others, but by proposing an exchange with persons who live in the south and west, and who are lovers of ferns, that if they will send me, by mail, roots of the varieties growing in their viciuity, I will exchange for those peculiar to the Eastern States, or will cheerfully pay all expenses. I have, in my collection, some three hundred kinds of exotic ferns, and some may desire to exchange for them or for dry fronds for their herbariums.

I want particularly to get hold of Phegopteris alpestris, California and Oregon. Acrostichum aureum, Florida. Gymnogramme pedata, Notholœna ferruginea, N. candida, N. Fendleri, Cheilanthes Alabamensis, C. Fendleri, C. gracillima, C. argentea, C. Eatoni, Adiantum pilosum, Asplenium septentrionale, A. dentatum, A. montanum. And if you have subscribers in southern Texas, I want to know if Adiantum Æthiopicum grows there.

Plants can now be sent across the continent for two cents per oz., if there is no other writing than the directions. And I have just received in perfect order a lot of ferns from San Francisco, each root being wrapped in damp moss, with plenty of twine, and all packed in a cigar box.

CRACKING OF PEARS.

BY X.

Pears do not crack when the soil is sufficiently supplied with lime and potash; and they crack most where those salts are deficient. Common wood ashes contain those salts, nearly in the quantity and proportions that pear trees on such soil require—forty per cent of potash and thirty per cent of lime. Reasoning from these facts, I applied wood ashes at the rate of four hundred bushels to the acre, after the fruit had formed and cracked. Many of them healed up and *made perfect fruit the same season*, others not until the next season. A friend, at my suggestion, applied it heavily to a favorite *Butter pear tree* in his own garden for several years in succession, and has had for several years perfect and delicious pears, and I will guarantee it to cure any case, where the ashes are fairly and abundantly applied.

I was told by an experienced hand that I would kill the trees, but on the contrary, I cured them. Therefore, do not be afraid; if one application will not suffice, give them a larger dose next year.

A moist atmosphere undoubtedly encourages the growth of the tree and fruit, whilst the insufficiency of proper food prevents the perfection of either; hence, cracked fruit and "rough old bark."

A TROPICAL WINTER GARDEN.

BY F. W. POPPEY, GARDENER TO HUDSON RIVER STATE HOSPITAL, POUGHKEEPSIE, N. Y.

The growth of our already large cities continues steadily, and the chances for persons advanced in life or those in a delicate state of health for wholesome out-door exercise are becoming smaller, especially during the winter season, which we may, in that respect, count from middle of October to middle of May—seven long months.

For the relief of that numerous class, and at the same time for instructive amusement to

others, societies have been formed in several European cities for the purpose of establishing gardens under glass, called respectively "Conservatories," "Sanitaries," "Palm Gardens," or "Winter Gardens." Such an establishment we have not here, though we need one or more as much as they do elsewhere. It would be a not less desirable adjunct to our common school system than a Zoological Garden or an Aquarium, as has been said in recommendation of them, besides being an attractive place where the student, the merchant, the traveler would find useful information, and the invalid secure wholesome exercises.

But if we were ever to erect a similar institution it would behoove us, with facilities for indoor gardening greater than any part of Europe can boast of, not to occupy their already antiquated and, a priori, too small and inadequate structures; but to show in this, as we have in so many other respects, that we are a progressive people.

Up to the present time our larger conservatories have been built by men who were novices in their undertaking; and it was but natural that they should produce, but more or less modified, copies of European originals, which are for more than one reason unsuitable for our purpose. They seem invariably to have been built with more regard to their external appearance, and to the Architect's skill in putting iron and glass together, than with due respect to their internal purpose. Their defects are easier to point out than their merits. But we must bear in mind that most of them have been erected more than a quarter of a century ago, and should no longer be regarded as models to be guided by—especially not to the English ones—for our sunny winters and dry atmosphere generally point out a style of arranging and a way of managing our conservatories far different from that of the British. The effect of a prejudice in that respect may be seen in the architect's report to the Commissioners of Central Park, for 1870, in which that gentleman objects to the chosen site for the Great Conservatory as "*being too damp, no matter how perfect the heating might be.*" Such is the consequence of getting one's information from abroad instead of from nature and observation here. The fact is that in this country we seldom, if ever, have sufficient water to render the atmosphere in our glass houses of any considerable size damp enough, in spite of copious watering and syringing. The system of confidently entrusting architects with the execution of such work ought to be suspended until building conservatories has been made a part of the education of architects. Since that is not the case how can they conscientiously undertake to do it?

As an architect who is to build a hospital for patients of a peculiar class, for instance the insane, has to receive his instruction from a physician who has made this peculiar disease his specialty, so ought an architect, who intends to build a glass house in which valuable plants are to live and thrive, get his information from such gardeners as are competent in this peculiar branch of horticulture. Between a so-called crystal palace for the exhibition of dead objects, and a conservatory for the maintainance of living representatives of foreign climes, is about the same difference as there is between a warehouse and a school or orphan house. It is one of the greatest sources of vexation and disappointment for gardeners to work with glass houses that have been built by men who consider themselves too far above a gardener as to suppose that they might yet learn something from him. That gardeners competent to give information in this matter are few and far between in this country is true, but that there has not yet been one architect who was is equally true.

The frame of the house, or rather the roof, (for such a house is nothing but roof,) may be constructed of wood or iron, or a combination of wood and iron. Wood is the cheapest but precludes considerable extent. Iron is the most expensive though not lasting in proportion, nor in many other respects the most desirable or recommendable material for this country. We are, therefore, for our part, decidedly in favor of a combination of iron and wood, which enables us to avail ourselves of the advantages of both, and to save a good deal of money in the construction as well as in the subsequent management.

In planning the house the proper exposition, the means for ventilating, shading, heating, and extension if it should become necessary, the facilities for moving in and out of plants and other materials, the convenient location of those auxiliary house, (without which a large conservatory cannot be maintained,) and apartments for the gardeners who have to take care of things, all these are objects of primary importance, and not the outward shape, as it seems to be invariably the case with our conservatory building architects.

Glasshouses ought never to be made conspicuous objects of view; the simpler and the more efficient for their immediate purpose they are constructed the better. But those "crystal palaces" are neither the one or the other, and possess but for a short time the attractiveness of novelty.

Conservatories, or plant houses, are contrivances for an imitation of a peculiar atmosphere, and ought to be constructed mainly with a view to the accomplishment of that purpose. Pillars, props, braces, brackets, galleries, and whatever the names of constructive appliances may be, must be avoided, and where absolutely necessary, located and constructed so as to interfere as little as possible with the free access of light; the main requisite. The glass, by this transparency, represents space, open space, the rest is nothing but the frame work of a huge bird cage or a lantern. Thus any attempt of the builder to make the thing imposing, monumental or beautiful, must be futile; for he lacks the material with which alone such effects can be produced, and all that remains for him to do is to construct his house as plain as possible and leave the palm to the palms and their companions.

A most important point is to leave the inner room and the ground as free as possible, for a tasteful, natural arrangement, so as to make us almost forget that we were imprisoned together with the plants. For this reason, also, the approach on the outside should be cut off by a dense planting of evergreens, at a suitable distance so as not to impede the free circulation of light and air. The space between this screen and the house furnishes a convenient and secure place for those plants which have to be cultivated out of doors during the summer. The main entrance should not be directly through the glass front but through a substantial hall built in a style which would prepare the visitors mind for scenes of foreign climes, as that of the Alhambra or the Alcazar would be most likely to do.

None of the existing conservatories, mainly on account of their narrowness, offer a suitable facility for the display of that large and highly interesting class of aquatic plants, whilst the terrestrial ones, irrespective of their home, are indiscriminately, or for more decorate purposes, mixed together, so as to render a visit to such a big conservatory rather bewildering than instructive. A plant house for public use ought not to be a conservatory, in the strictest sense of the word, nor a sort of plant magazine, any more than a zoological garden ought to be a mere menagarie; but partake largely of the character of a botanical museum in which the plants are arranged in natural grouping, according to their geographical distribution over their respective zones, and not have the representatives of the East with those of the West Indies, the African with the Central American and Australian, put up in rows of pots and boxes, like so many accidental curiosities, as if for sale, without the slightest respect to good taste or the just claims of science.

A promenade through a garden of this kind ought to be a journey over the tropics, all round the world, on a reduced scale, thus securing the visitor's interest with increasing force of a real nature at every step, imparting useful information together with agreeable recreation.

Have we not among us a sufficient number of intelligent and public spirited men who, by their combined efforts, would be willing to add so desirable an establishment to our other public institutions, which certainly would be a credit to themselves and a benefit to all? Even those who would not be willing to lend their financial aid to such an enterprise without a fair compensation, could easily be convinced that as an investment of money it would be satisfactory. A winter garden, covering from one to three acres, connected with a music hall, proportioned to the population, would certainly yield a good return on the capital, as is proved by experience wherever the experiment has been tried.

Such an institution—for the promotion of moral and æsthetic culture—would it not be an ornament to every city, and be something the founders of which may be proud of?

Who will take the initiative?

CRITICISMS AND CORRECTIONS.

BY A. H.

The *Gardener's Monthly* (and it is not alone in so doing) will sometimes quote from a foreign or domestic journal a description of a new fruit. The original account will describe, perhaps, its keeping qualities by saying it was in eating "until the middle of this month." But as no date is given for the article, or the journal containing it, the reader fails to get the knowledge intended to be conferred.

(See vol. for 1873, page 28, Buccleugh Grape, for illustration).

A compositor, according to the lexicon, is one who puts things in order. A printer's compositor sometimes in putting manuscript in order, puts the writer's statements in disorder. Thus in 1869, (see page 361) I wrote, speaking of the Lucrative, Tyson and Louise Bonne pears. "The latter had its saccharine elements well developed, and might be ranked as a very good No. 2, (meaning second class pear) and is one of the most reliable for a crop. The compositor puts a period after good, and says No. 2 (which would be the Tyson) is the most reliable for a crop. The error would not be worth adverting to, had not the bearing qualities of the Tyson in some localities been questioned. Here it bears well, but I did not testify for it as the types make me to do.

In vol. for 1873, page 23, is an article which seems to call for some editorial explanation. E. H. S. writes: "I have applied lime and ashes when digging the pear trees in the fall, consisting of bones and all sorts of rubbish."

Now is it the lime and ashes, or the pear trees, which consist of bones and all sorts of rubbish. As a result of this mysterious operation, the fruit was said to be wonderfully improved, and this will justify your readers in desiring that the recipe be better understood.

[The expression was obscure. E. H. S., no doubt, intended to say that bones and rubbish were in the ashes. We have seen remarkably good results from old kitchen ashes, which were full of this waste material.—Ed. G. M.]

INCREASE IN SIZE OF THE HYACINTH.

BY MISS A. G., READING, PA.

A lady friend of the writer had a bed prepared for her hyacinths in the spring. It was trenched or dug out, for 2 feet in depth. A layer of well-rotted horse manure (littered with leaves) was placed in the bottom of the trench. It was then filled up with a mixture of half loam—one-fourth manure, and one-fourth sand—well mixed. In the fall the hyacinths were planted in it.

They grew surprisingly, the stems and blossoms being enormous—the stems reaching the height of 2 feet, bearing blossoms 1½ inches in diameter, and very double. The same bulbs had been cultivated for several years previously, without being more than of good average size. Afterwards, by neglect, the same bulbs were reduced to ordinary size. Roses, lilies, gladiolus, and almost all plants that were put into this bed, grew luxuriantly.

At another time, lime was added, in the fall, to a bed that had been trenched several years previously. The hyacinths put in the bed, were, by this, doubled in size and beauty.

IRON FOR PEAR TREES.

BY A. HUIDEKOPER, MEADVILLE, PA.

Your readers will recall some time, when they have entered a room full of paintings, and have seen some canvas, that at first view seemed daubed with paint, and coated with varnish in a very meaningless kind of a way; but when shifting themselves, they got sight of the same canvas from the right stand-point, with a better light on it. Then the varnish disappeared, the colors arrange themselves into harmonious relations, distinct objects of contemplation presented themselves, and the gross and chaotic elements resolved themselves into orderly and beautiful manifestations of artistic skill.

Now this long sentence seems wholly a departure from the subject in hand; but what I wish to illustrate by it, is that we may fail to have faith in a remedy because we regard it from a wrong stand-point in estimating its mode of action.

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In the *Gardener's Monthly* for 1870, page 341,

If thawed in a warm atmosphere, or warm water, their structure is disorganized, and they become soft and spongy. Now this all proves to me that they were "frozen solid." But, if instead of taking all out of the pit, a part are left in and covered up with soil till the warm weather of spring, and then taken out and planted, they will grow and produce seed. These are facts that I and thousands of others in the country have often observed. That they were frozen is proved by the condition of those taken out and thawed, and that freezing did not destroy their vitality is evident from the fact that those that remained in the pit till spring did actually grow.

Small turnips often survive all the freezing of winter where they grow, and shoot up and grow vigorously in the spring. Do they not freeze? If they do not, then it is impossible for a vegetable to freeze. I have also known cabbage plants to endure the weather of a cold winter without protection, and grow in the spring. The leaves often become so stiffened by the cold that they will break like thin plates of ice, yet their vitality survives it all. I have observed the same in regard to other species of the *Brassica* family. That too, in the absence of any coating of ice on the surface.

The condition of timber is so changed by exposure to continued freezing weather, as to give it an entirely different consistency. Its degree of solidity and resistance to cutting tools are very greatly increased. Some species of timber cannot be successfully cut with a saw when thus frozen. This frozen condition is revealed to the experienced woodman at once, on striking his axe into a tree when in this state. During the present winter I have made special examination of pieces of wood cut from the north side of different trees, after several days of hard freezing weather. I took a piece and exposed it to a temperature above the freezing point for a time sufficient to thaw it throughout; I then split it so as to expose a fresh surface, and compared it to a piece not exposed to warmth, and the frozen condition of the sap in the latter was easily detected by the naked eye, especially when held in the sunshine. This was made further evident when it was placed under the miscroscope. Do the above and other similar facts prove that the sap in vegetables may be frozen solid without impairing their vitality? Or are they all to go for nothing in the face of opposing theories? With me they conclusively settle the question, that plants do survive the complete freezing of their sap. My motto is, "take care of the facts, and the theories will take care of themselves."

RUSTIC STANDS AND VASES.

BY F. A. S.

Having frequently noticed the unhealthy and sickly appearance of the plants, in many tastefully arranged rustic stands and vases, before the hot suns of summer yet intervened to parch their roots or curl their beautiful verdant, purple or waving silvery foliage; it has occurred to me that the causes of failure (which are not few) was in the injudicious and indiscriminate selection of the plants for the position in which they were intended to be placed, as much as neglect in the after treatment in properly attending to their wants in supplying them with water, and frequently syringing them morning and evening, for the syringe is certainly indispensable, and its frequent application prevents the pores of the plants from getting clogged with dust, and enables them to exhale noxious gases, and always repays the trouble by their healthy, clean and inviting appearance.

I have filled and taken care of stands, vases, and rustic baskets in different situations during winter and summer; and as these hints are only intended for those not acquainted with the different requirements of plants in the different situations in which they are placed, I have found a compost of old friable loam and leaf mould, with an addition of a little sand and pounded charcoal, to answer as a good compost, with a layer of charcoal (when convenient) for drainage.

The plants that are sure to stand our hot sun in summer are:

FOR CENTRE.

Scarlet Geraniums, single or double.
Coleus Verschaffelti, or its varieties.
Centaurea gymnocarpa.
" candidissima and Achyranthus, in varieties surrounded by Alyssums, Nierembergias, Alternanthera, Cuphea, Gnaphaliums, and double flowering Ice plants, rose and white.

Vines.—Ivies, Senecio scandens, Lophospernum, Maurandias and Manettias, with the outer row Kenilworth Ivy, Moneywort, Vinca variegata, Gnaphalium lanatum and Lobelia in variety, all of which will grow luxuriantly without any extra care, and fully compensate the fair cultivator during the season, and indeed look fresh and inviting in the fall when nature's painter decks the forest in her dazzling and brilliant golden hues.

But if the situation be shaded from the sun's rays from—say ten in the morning to four in the afternoon—we have other gems that will thrive equally as well.

FOR CENTRE.

Fuchsias, Dracænas, Centaurea, Achyranthus, Coleus, Pteris, in varieties, accompanied by Begonias, Ferns, Gnaphaliums, Saxifrage, Torenia, with Ficus repens, Vinca variegata, Tradescantia zebrina, Lycopodium denticulatum and Panicum variegata, with Vines, Ivies,—English and parlor,—Cissus discolor and Smilax. But it is invidious to discriminate among so many favorites. I will leave to others more competent to do them justice, as I feel more in place at the potting bench than the desk. More accustomed to handle the pruning knife than the quill.

WHEN TO PRUNE GRAPE VINES AND WHEN TO COVER THEM.

BY T. J. PITTS, NASHUA, IOWA.

In *The Post*, under the head of "Farm, Orchard and Garden," is an article on "pruning grape vines," taken from the *Forney's Weekly Press*. Now the writer of that article (Thomas Meehan, editor of the *Gardener's Monthly*, and horticultural editor or correspondent of several eastern papers) is, undisputably, one of the very best authorities on horticulture in this country. His article on "pruning grape vines" shows the folly of quoting the authority and practice of southeastern fruit growers for northwestern farmers and gardeners to follow. This writer is seeking to correct those (*perhaps*) eastern papers, which have been advising people to prune their grape vines in the fall. As he says, "few ever do it," and indeed we are not sure that those papers who recommend it ever knew any one who really tried it on any extensive scale. And again, "the writer has to confess he is like all the rest of the world, and prunes grapes after the winter has passed away." Now this may be all true when applied to that part of the world for which the article was written; but for this northwestern part of the world this "pruning grape vine" article needs itself to be pruned—to be taken from and added too—in order to adapt itself to this latitude.

It is certainly true that Mr. Meehan knows that *fall pruning* and *covering* grape vines is *extensively* practiced in the *west*, and is absolutely necessary as a condition to insure success. This has been and is, every year, being proved by the experience of hundreds, and Mr. Meehan so instructs his western subscribers through the *Gardener's Monthly*, and this same article contains the theory favoring fall pruning, which experience, here at last, proves to be the true theory. The writer says, "we know that if we cut a tree down to the ground in the fall, and another just like it in the spring, the fall cut one will sprout stronger in the spring than the other. This is the principle upon which the hedges are managed."

"When one has become weakened, and it is desired by cutting down to make it push stronger from the base, the cutting is always done in the fall. Then we know that moisture is escaping from the branches of trees all winter. And frequently more is thus evaporated than the roots can well supply, and hence it would seem but reasonable that if a good portion be cut away in the fall, there will be so much less strain on the roots for moisture during the winter."

And I would add that another good reason for fall pruning is that it leaves the vines much easier to lay down to cover, and it requires certainly much less covering after one-half or two-thirds of the old wood is removed. I will refer the reader to Mr. Meehan's article for his manner of pruning, which is plain and practical, and will here give my manner of covering vines.

After all the vines are cut loose from the stakes or trellis and are pruned, I gather all the canes of the first hill in row together in one hand, and with the other take some of the straight blue grass, as I prefer hay to straw, in the other, and tie the canes together, bending all to the ground and toward the second hill, and if necessary lay a stone or stick to hold in place till the next hill can be gathered and tied in like manner, bending the same in toward the first hill, and then tie both hills together—which, if the vines be four or more years set, of good growth, at eight feet apart they ought to lap well for tying, and after thus tied together, they will keep in place for covering. After all are thus tied, I cover lightly with course hay or straw, putting sufficient earth on the hay and vines to hold the same in place, and to help protect the same from sun and wind.

This may seem to be too much labor, but when there are many vines to cover it makes a great saving in covering material, and the little extra time required in the fall is much more

than made good by the much less time required in the spring, to uncover and remove the extra amount of litter out of the way of cultivation. Vines thus covered came out this spring all right, and bore a heavy crop of fine fruit, whilst vines left uncovered were nearly in every case badly damaged and most entirely killed out.

[The above from the *Nashua* (Iowa) *Post*, we have been asked to transfer to our columns, which we do with pleasure. It contains some excellent practical hints from one of the best cultivators in the west.—ED. G. M.]

NATIVE FERNS.

BY J. WARREN MERRILL, CAMBRIDGEPORT, MASSACHUSETTS.

In your number for December I asked if any of your numerous readers could put me in the way of procuring four ferns, which I named. The kind response which I received, from many persons, to me unknown, has convinced me of a wide-spread interest in the "flowerless plants"; and although the communication was made at an unfavorable time of year, it resulted in procuring for me two of the four kinds which I had all summer tried in vain to secure. This induces me to say that I have been for some time making a collection of *native ferns*—not of the fronds in an herbarium, but the live plants—and have, I think, sixty-nine varieties this spring in fine growing order. There are, however, according to a list recently published, one hundred and thirty-eight varieties in the United States and the British Provinces; so that I have but one-half of them. I can think of no way to secure any considerable number of others, but by proposing an exchange with persons who live in the south and west, and who are lovers of ferns, that if they will send me, by mail, roots of the varieties growing in their vicinity, I will exchange for those peculiar to the Eastern States, or will cheerfully pay all expenses. I have, in my collection, some three hundred kinds of exotic ferns, and some may desire to exchange for them or for dry fronds for their herbariums.

I want particularly to get hold of Phegopteris alpestris, California and Oregon. Acrostichum aureum, Florida. Gymnogramme pedata, Notholœna ferruginea, N. candida, N. Fendleri, Cheilanthes Alabamensis, C. Fendleri, C. gracillima, C. argentea, C. Eatoni, Adiantum pilosum, Asplenium septentrionale, A. dentatum, A. montanum. And if you have subscribers in southern Texas, I want to know if Adiantum Æthiopicum grows there.

Plants can now be sent across the continent for two cents per oz., if there is no other writing than the directions. And I have just received in perfect order a lot of ferns from San Francisco, each root being wrapped in damp moss, with plenty of twine, and all packed in a cigar box.

CRACKING OF PEARS.

BY X.

Pears do not crack when the soil is sufficiently supplied with lime and potash; and they crack most where those salts are deficient. Common wood ashes contain those salts, nearly in the quantity and proportions that pear trees on such soil require—forty per cent of potash and thirty per cent of lime. Reasoning from these facts, I applied wood ashes at the rate of four hundred bushels to the acre, after the fruit had formed and cracked. Many of them healed up and *made perfect fruit the same season*, others not until the next season. A friend, at my suggestion, applied it heavily to a favorite *Butter pear tree* in his own garden for several years in succession, and has had for several years perfect and delicious pears, and I will guarantee it to cure any case, where the ashes are fairly and abundantly applied.

I was told by an experienced hand that I would kill the trees, but on the contrary, I cured them. Therefore, do not be afraid; if one application will not suffice, give them a larger dose next year.

A moist atmosphere undoubtedly encourages the growth of the tree and fruit, whilst the insufficiency of proper food prevents the perfection of either; hence, cracked fruit and "rough old bark."

A TROPICAL WINTER GARDEN.

BY F. W. POPPEY, GARDENER TO HUDSON RIVER STATE HOSPITAL, POUGHKEEPSIE, N. Y.

The growth of our already large cities continues steadily, and the chances for persons advanced in life or those in a delicate state of health for wholesome out-door exercise are becoming smaller, especially during the winter season, which we may, in that respect, count from middle of October to middle of May—seven long months.

For the relief of that numerous class, and at the same time for instructive amusement to

others, societies have been formed in several European cities for the purpose of establishing gardens under glass, called respectively "Conservatories," "Sanitaries," "Palm Gardens," or "Winter Gardens." Such an establishment we have not here, though we need one or more as much as they do elsewhere. It would be a not less desirable adjunct to our common school system than a Zoological Garden or an Aquarium, as has been said in recommendation of them, besides being an attractive place where the student, the merchant, the traveler would find useful information, and the invalid secure wholesome exercises.

But if we were ever to erect a similar institution it would behoove us, with facilities for indoor gardening greater than any part of Europe can boast of, not to occupy their already antiquated and, a priori, too small and inadequate structures; but to show in this, as we have in so many other respects, that we are a progressive people.

Up to the present time our larger conservatories have been built by men who were novices in their undertaking; and it was but natural that they should produce, but more or less modified, copies of European originals, which are for more than one reason unsuitable for our purpose. They seem invariably to have been built with more regard to their external appearance, and to the Architect's skill in putting iron and glass together, than with due respect to their internal purpose. Their defects are easier to point out than their merits. But we must bear in mind that most of them have been erected more than a quarter of a century ago, and should no longer be regarded as models to be guided by—especially not to the English ones—for our sunny winters and dry atmosphere generally point out a style of arranging and a way of managing our conservatories far different from that of the British. The effect of a prejudice in that respect may be seen in the architect's report to the Commissioners of Central Park, for 1870, in which that gentleman objects to the chosen site for the Great Conservatory as "*being too damp, no matter how perfect the heating might be.*" Such is the consequence of getting one's information from abroad instead of from nature and observation here. The fact is that in this country we seldom, if ever, have sufficient water to render the atmosphere in our glass houses of any considerable size damp enough, in spite of copious watering and syringing. The system of confidently entrusting architects with the execution of such work ought to be suspended until building conservatories has been made a part of the education of architects. Since that is not the case how can they conscientiously undertake to do it?

As an architect who is to build a hospital for patients of a peculiar class, for instance the insane, has to receive his instruction from a physician who has made this peculiar disease his specialty, so ought an architect, who intends to build a glass house in which valuable plants are to live and thrive, get his information from such gardeners as are competent in this peculiar branch of horticulture. Between a so-called crystal palace for the exhibition of dead objects, and a conservatory for the maintainance of living representatives of foreign climes, is about the same difference as there is between a warehouse and a school or orphan house. It is one of the greatest sources of vexation and disappointment for gardeners to work with glass houses that have been built by men who consider themselves too far above a gardener as to suppose that they might yet learn something from him. That gardeners competent to give information in this matter are few and far between in this country is true, but that there has not yet been one architect who was is equally true.

The frame of the house, or rather the roof, (for such a house is nothing but roof,) may be constructed of wood or iron, or a combination of wood and iron. Wood is the cheapest but precludes considerable extent. Iron is the most expensive though not lasting in proportion, nor in many other respects the most desirable or recommendable material for this country. We are, therefore, for our part, decidedly in favor of a combination of iron and wood, which enables us to avail ourselves of the advantages of both, and to save a good deal of money in the construction as well as in the subsequent management.

In planning the house the proper exposition, the means for ventilating, shading, heating, and extension if it should become necessary, the facilities for moving in and out of plants and other materials, the convenient location of those auxiliary house, (without which a large conservatory cannot be maintained,) and apartments for the gardeners who have to take care of things, all these are objects of primary importance, and not the outward shape, as it seems to be invariably the case with our conservatory building architects.

Glasshouses ought never to be made conspicuous objects of view; the simpler and the more efficient for their immediate purpose they are constructed the better. But those "crystal palaces" are neither the one or the other, and possess but for a short time the attractiveness of novelty.

Conservatories, or plant houses, are contrivances for an imitation of a peculiar atmosphere, and ought to be constructed mainly with a view to the accomplishment of that purpose. Pillars, props, braces, brackets, galleries, and whatever the names of constructive appliances may be, must be avoided, and where absolutely necessary, located and constructed so as to interfere as little as possible with the free access of light; the main requisite. The glass, by this transparency, represents space, open space, the rest is nothing but the frame work of a huge bird cage or a lantern. Thus any attempt of the builder to make the thing imposing, monumental or beautiful, must be futile; for he lacks the material with which alone such effects can be produced, and all that remains for him to do is to construct his house as plain as possible and leave the palm to the palms and their companions.

A most important point is to leave the inner room and the ground as free as possible, for a tasteful, natural arrangement, so as to make us almost forget that we were imprisoned together with the plants. For this reason, also, the approach on the outside should be cut off by a dense planting of evergreens, at a suitable distance so as not to impede the free circulation of light and air. The space between this screen and the house furnishes a convenient and secure place for those plants which have to be cultivated out of doors during the summer. The main entrance should not be directly through the glass front but through a substantial hall built in a style which would prepare the visitors mind for scenes of foreign climes, as that of the Alhambra or the Alcazar would be most likely to do.

None of the existing conservatories, mainly on account of their narrowness, offer a suitable facility for the display of that large and highly interesting class of aquatic plants, whilst the terrestrial ones, irrespective of their home, are indiscriminately, or for more decorate purposes, mixed together, so as to render a visit to such a big conservatory rather bewildering than instructive. A plant house for public use ought not to be a conservatory, in the strictest sense of the word, nor a sort of plant magazine, any more than a zoological garden ought to be a mere menagarie; but partake largely of the character of a botanical museum in which the plants are arranged in natural grouping, according to their geographical distribution over their respective zones, and not have the representatives of the East with those of the West Indies, the African with the Central American and Australian, put up in rows of pots and boxes, like so many accidental curiosities, as if for sale, without the slightest respect to good taste or the just claims of science.

A promenade through a garden of this kind ought to be a journey over the tropics, all round the world, on a reduced scale, thus securing the visitor's interest with increasing force of a real nature at every step, imparting useful information together with agreeable recreation.

Have we not among us a sufficient number of intelligent and public spirited men who, by their combined efforts, would be willing to add so desirable an establishment to our other public institutions, which certainly would be a credit to themselves and a benefit to all? Even those who would not be willing to lend their financial aid to such an enterprise without a fair compensation, could easily be convinced that as an investment of money it would be satisfactory. A winter garden, covering from one to three acres, connected with a music hall, proportioned to the population, would certainly yield a good return on the capital, as is proved by experience wherever the experiment has been tried.

Such an institution—for the promotion of moral and æsthetic culture—would it not be an ornament to every city, and be something the founders of which may be proud of?

Who will take the initiative?

CRITICISMS AND CORRECTIONS.

BY A. H.

The *Gardener's Monthly* (and it is not alone in so doing) will sometimes quote from a foreign or domestic journal a description of a new fruit. The original account will describe, perhaps, its keeping qualities by saying it was in eating "until the middle of this month." But as no date is given for the article, or the journal containing it, the reader fails to get the knowledge intended to be conferred.

(See vol. for 1873, page 28, Buccleugh Grape, for illustration).

A compositor, according to the lexicon, is one who puts things in order. A printer's compositor sometimes in putting manuscript in order, puts the writer's statements in disorder. Thus in 1869, (see page 361) I wrote, speaking of the Lucrative, Tyson and Louise Bonne pears. "The latter had its saccharine elements well developed, and might be ranked as a very good No. 2, (meaning second class pear) and is one of the most reliable for a crop. The compositor puts a period after good, and says No. 2 (which would be the Tyson) is the most reliable for a crop. The error would not be worth adverting to, had not the bearing qualities of the Tyson in some localities been questioned. Here it bears well, but I did not testify for it as the types make me to do.

In vol. for 1873, page 23, is an article which seems to call for some editorial explanation. E. H. S. writes: "I have applied lime and ashes when digging the pear trees in the fall, consisting of bones and all sorts of rubbish."

Now is it the lime and ashes, or the pear trees, which consist of bones and all sorts of rubbish. As a result of this mysterious operation, the fruit was said to be wonderfully improved, and this will justify your readers in desiring that the recipe be better understood.

[The expression was obscure. E. H. S., no doubt, intended to say that bones and rubbish were in the ashes. We have seen remarkably good results from old kitchen ashes, which were full of this waste material.—Ed. G. M.]

INCREASE IN SIZE OF THE HYACINTH.

BY MISS A. G., READING, PA.

A lady friend of the writer had a bed prepared for her hyacinths in the spring. It was trenched or dug out, for 2 feet in depth. A layer of well-rotted horse manure (littered with leaves) was placed in the bottom of the trench. It was then filled up with a mixture of half loam—one-fourth manure, and one-fourth sand—well mixed. In the fall the hyacinths were planted in it.

They grew surprisingly, the stems and blossoms being enormous—the stems reaching the height of 2 feet, bearing blossoms 1½ inches in diameter, and very double. The same bulbs had been cultivated for several years previously, without being more than of good average size. Afterwards, by neglect, the same bulbs were reduced to ordinary size. Roses, lilies, gladiolus, and almost all plants that were put into this bed, grew luxuriantly.

At another time, lime was added, in the fall, to a bed that had been trenched several years previously. The hyacinths put in the bed, were, by this, doubled in size and beauty.

IRON FOR PEAR TREES.

BY A. HUIDEKOPER, MEADVILLE, PA.

Your readers will recall some time, when they have entered a room full of paintings, and have seen some canvas, that at first view seemed daubed with paint, and coated with varnish in a very meaningless kind of a way; but when shifting themselves, they got sight of the same canvas from the right stand-point, with a better light on it. Then the varnish disappeared, the colors arrange themselves into harmonious relations, distinct objects of contemplation presented themselves, and the gross and chaotic elements resolved themselves into orderly and beautiful manifestations of artistic skill.

Now this long sentence seems wholly a departure from the subject in hand; but what I wish to illustrate by it, is that we may fail to have faith in a remedy because we regard it from a wrong stand-point in estimating its mode of action.

A friend, last fall, pointed out to me a pear tree, the fruit of which he said, had cracked badly for several years. Last year he placed some iron filings about it, and the tree, at its next fruiting, presented smooth, uncracked fruit. Now was this cause and effect, or simply coincidence? The same phenomena have been observed in isolated cases in a wide field of experiment, which would seem to remove the question out of the role of chance coincidence. A late writer says "if iron was a reliable remedy for the cracking of pears, the recipe would be more universally known and adopted." This as a counter-argument is not without force, and shows that iron as a remedy probably has its limitations.

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In the *Gardener's Monthly* for 1870, page 341,

it is stated that Mr. Robinson, in his work on mushrooms, alleges "that a single rusty nail in the bed in which they (mushrooms) are planted, will blast all hopes of a crop." Why? Well, who knows? It seems very absurd, yet the author probably had some practical evidence of the truth of his statement.

If some one had predicted that the use of steel pens would produce scriveners paralysis, he would have been ridiculed for his belief; but there seems to be cause for believing in such an effect now. The practice of driving nails in a tree seems an ignorant abuse of it to the educated orchardist; but there may be a philosophy beneath the act that the latter has failed to discover. Chemistry, electricity, fertilization, all may have to become our stand-point of observation, and possibly some others before we get the right view of matters. If a rusty nail will ruin a bed of mushrooms, the application of iron may destroy still other forms of fungoid life.

I make these suggestions, not to solve the problem of "iron for pear trees," but to invoke observation and study of the subject by others, with minds more scientific than my own.

PLANTING TREES ON CITY SIDEWALKS.

BY WILLIAM SUTHERLAND, GARDENER AND FLORIST, PHILADELPHIA, PENNA.

In selecting shade trees for planting in the streets of our large towns and cities, what is wanted most is a tree easy to move, of rapid growth, and not too sensitive to the effects of gas or the action of worms.

The only tree that I have found perfectly invulnerable to the latter pest is the Tulip Poplar, (Liriodendron tulipifera). I have seen it surrounded by trees whose foliage was entirely eaten off, and it never touched. All trees will suffer more or less from the effects of a gas leak any where near their roots,—some kinds, of course, will stand it better than others,—but hundreds die annually from this cause alone, while others die for want of nourishment, being planted on sidewalks that have been graded up with coal ashes and other refuse, without sufficient soil being put in to support them,—they grow a little at first, and then gradually dwindle away.

The Tulip Poplar is of rapid growth, and invulnerable to worms, but one of the worst trees to move. And the same may be said of the Cucumber Tree (Magnolia acuminata). Indeed it is almost impossible to move them any size, except just at the time they have made a growth of a few inches, which renders them extremely difficult to handle or carry any distance.

The Linden, both the American and European, are fine trees, of rapid growth, and easily moved, &c., but among the first to be attacked by insects; and the same may be said of many of the Maples. The white, red and yellow flowering Horse Chestnuts and Norway Maple are splendid trees, need very little pruning, and are only some seasons attacked by insects; but all of them are rather of slow growth. The Silver Poplar and Paper Mulberry are noble trees, but do not root deep enough, and in consequence are always throwing up the pavement or blowing over. The Ailanthus has long been condemned on account of the peculiar odor of its blossoms when in flower, making some persons sick.

The tree that comes nearest to filling the want, and in twelve years experience, proved to be the best for city purposes, is the Black or Carolina Poplar. This tree is easy to move, of rapid growth, not generally troubled with insects, and withstands the effects of gas longer and better than any tree I am acquainted with. The leaves are of a dark glossy green, and of good size, affording an ample shade; and if the tree be healthy, and properly planted, with a cart load of good, fresh earth, success is almost certain. This is the tree for the million, and next in order I would put the Norway Maple and Horse Chestnut.

WHY WE LACK GARDENERS.

Remarks on Gardening, Gardeners, and their Employers.

BY T. W. P.

About twenty years ago, "*Landscape Gardening and Garden Architecture,*" on this side of the Atlantic, were almost unknown, and the commerce in seeds and flowers was comparatively insignificant. Thanks to men like Downing, Copeland, and the general prosperity of the people, a greater interest was manifested in gardening, and considerable progress in that, both scientific and artistic branch of industry, has been achieved. But lately, it would appear to us as if that progress had come to a halt, and that gardening is dwindling down to mere floriculture, of a most empyrical and rudimentary kind. There are neither public nor private horticultural establishments worthy of the times we live in. Those places described in Downing's Landscape Gardening, perhaps fine in his days, are either *gone up*, neglected, or never have been what they were said to be, as some still existing, prove on ocular inspection. The cause of this greatly-to-be-regretted fact is not difficult to discover.

Suppose architects had met with as little encouragement as gardeners have, would there be such manifest progress in architecture as we have now every reason to be proud of? Suppose painters and sculptors had not been invited and encouraged, would we have any representatives of these arts above the sign painter and stone cutter? If there were better inducements, more friendly and liberal encouragement offered to gardeners in general, a far different class of men than the present would come to the front, and the effect in gardening would soon be visible. But as long as the *eminent amateur* prefers to have for his dear money his place *improved* by so-called architects and would-be landscape gardeners, instead of employing competent men, properly educated for and experienced in that art; and as long as these places and their management are made uninviting to a good, intelligent and *truly* professional gardener, on account of poor remuneration and corresponding social consideration, *i. e.*, about level with domestic servants, a corresponding class of men only will apply for such situations. The very natural consequence is a general disinclination of native young men to embrace gardening as their legitimate avocation. What would induce a young man with a laudable ambition to spend a considerable part of his lifetime and money in the acquisition of the requisite knowledge, skill and experience, to elevate himself above those men, which have brought the position and rank of gardeners to so low a standard? And where could a young man get his education as a gardener? Is there any establishment or institution where it is possible for him to barely lay a fair foundation to it, and become sufficiently acquainted with the mere rudiments and auxiliary sciences of the art? Or are gardeners supposed to *learn* their "trade," as some persist to call it, like ordinary mechanics, by being apprenticed with a boss? The want of horticultural colleges is one of the principal reasons why there are so few educated and really competent gardeners, of which Paxton says: "Far from wishing to be censorious, we state it as a remarkable fact, that not one gardener in a hundred (meaning his countrymen) is competent to design and execute the disposition of a garden in a manner worthy of the present, or even antecedent ages."

The country boasts of a great number of so-called horticultural societies, though we have as yet none at the *Empire City*, but what is the fruit of their labors after all? Does horticulture really stand anything like a fair comparison with that of other countries?

We have, with the Central Park as an exception, not one public or private garden worth mentioning. Our nurseries, with exceptions few and far between, are small concerns, evincing but ordinary skill in rearing bedding plants and flowers for bouquets, but no enterprise of a higher order. There is hardly a private place, a so-called gentleman's place, worth the hire of a hack to see the *improvements*, or the collections of plants. And worse than all, there is no botanic garden, legally entitled to that designation. Why is this so?

Have our prominent men no taste for the art "*that softens nature's harshness, and copies her graceful touch?*" Is it that, with the much lamented Downing, the lively interest in gardening then perceptible, came also to a speedy end? If there is a party to blame for this, then it is that of the gentlemen themselves. Why do they not *learn* to discriminate between a competent man and a mere pretender, and do justice to the former? As long as they continue to treat gardeners with that wounding haughtiness, and intrust the care of their gardens to the *hands* of an inferior class, or do their own bungling, and not hold out better inducements to superior men, there is no hope to bring gardening to that rank it commands at present in Europe. It is by professional men only that art is advanced, and not by dillettanti, though their munificence may furnish the means for the successful work of the farmer.

LAWNS.

BY W. T. HARDING, AGRICULTURAL COLLEGE, COLUMBUS, OHIO.

I, for one among ten thousand, endorse F. R. Elliott's views on the proper method of making a lawn. No man writes with a better knowledge of the subject than he. The lovers of good lawns may implicitly follow his instructions as laid down in the *Monthly*, with a certainty of success. Our friend has the happiest way of expressing his ideas, with a perspicuity which

leaves nothing doubtful about what he says. The mantle of the late A. J. Downing seems aptly to have fallen upon the shoulders of his emulative pupil.

Sweet Vernal! What a pretty name! It seems suggestive of something agreeable, as indeed it is. My acquaintance with it goes back to early life. I well remember how sweet and refreshing was the odor of new mown hay, in the parks and meadows of "Merrie England." There, as a grass, it is a general favorite, on account of its pleasant aroma. Both sheep and cattle are exceedingly fond of it. Evidently, it *suits their taste* too. What a pity it should be *tabooed* on the lawn. Yet, there is no reason why we should not grow it. Like Timothy, it is too coarse a grass to make a good turf, velvet-like and elastic. Then grow some in another place, and as near the dwelling as possible. Scatter some seeds about the pastures, if any are adjacent; if not, select a suitable spot—a strip or patch somewhere at the side end or corner, where it will not mar the general smoothness in the main sweeps, or stretches so beautiful in the gardenesque style.

In my plea for pretty things, I would please the eye as much as possible, and at the same time remember there are pleasures of an olfactory kind to gratify also, so that when we "view those scenes so charming," we can recognize the delightful presence of Anthoxanthemum odorata, and exclaim, O! how sweet.

EDITORIAL.

TRAVELING RECOLLECTIONS NO. 7.

In our rambles through the Union, we note that some cities have few attractions for strangers. With little to induce people to stop on the way, they practice small tricks to force them to spend a dime or so among them, and in this way they hope to prosper. One of these little meannesses is to so arrange the time tables of the railroad lines, that no matter what hour one arrives in the place, he must stay several hours before he can go away again. Then all sorts of impediments are placed on the railway people; and if a train goes through a town, the iron horse must only travel on a walk, so that the passengers may get out and buy a gingerbread or mint stick as they go along. Philadelphia had a little of this feeling at one time. But the great work on Fairmount Park, and her many other attractions; gave her confidence; and now her great railroads whisk travelers through the immense city in half an hour, if they so desire, though all who can are only too glad to lie over a while to see what she is doing. In those old times of which we write, it was as hard for a Philadelphian to get out of the city, as for the stranger to go through. If we in Germantown—the northern part of Philadelphia city—wanted to take a four hours' ride to New York, we had to take two hours to get from our homes to the cars. Now the times are changed. Pennsylvania's great road connects New York with the far west, and in going through Philadelphia, takes Germantown in on the way.

Returning from our eight thousand miles of journeying through this great country, to find that the quarter centennial of the Pomological Society was drawing all the horticulturists to Boston, the writer would hardly have been induced to move on again, if the old slow times were still the fashion; but the live Pennsylvania Company's cars so near his home, the temptation could not be resisted to jump on, for another short voyage, to the eastern portion of our editorial dominions. Many leading horticulturists from the west and south were found on board, and before we could do little more than exchange greetings with them—examine the immense seed farm of the Landreth's at Bloomsdale, through which the railroad passes, and admire the beautiful and sweet whitepond Nymphæas, the native Lilies, and the many other floral beauties for which wild New Jersey is so famous, and which make a ride through her territories ever welcome to the horticulturist,—we found ourselves in the great city of New York.

Our new found friends had arranged, before leaving home, to go to Boston from New York, by steamer, only, as the result proved, to be caught in a fog, by which they did not get to their journey's end until the middle of next day,—but somehow we like to keep within smelling distance by night, and in full view by day of

green fields, and shady trees, and beautiful flowers; so we wended our way to the New Haven Depot, took a sleeper at 9 P. M.; and at 8 A. M. was enjoying the company of a large number of horticultural friends at the Parker House. Of the immediate doings of the convention we have already spoken; but there are a few pleasant recollections of Boston gardening, which often come to our mind even at this late day; and believing that scenes which not even six months have wiped out, may have some interest to our readers, we take up our pen to sketch a few of them.

One of the pleasantest incidents was a visit to the grounds of Wm. Gray, Esq., who invited the whole association to breakfast. After partaking of the material essentials, the party dispersed in small knots, whithersoever they listed through the grounds. It was our good fortune to have for our fellow voyager on this little trip, Mr. Wm. C. Barry, the son of our esteemed Rochester friend; and we take this opportunity to congratulate horticulture, that one so worthy, is following in his father's footsteps. It is natural for we, who are on the downward track, to wonder who will lead off when we are gone; and it is always a great satisfaction to feel, when we meet highly cultivated, intelligent and enthusiastic young men like this, that all will be well.

Mr. Gray's garden is not large for a country place, but considerable for one in the suburbs. We have not any figures, but suppose there are about twenty acres. Part of it is rough wild woods made up of fine forest trees, dense undergrowth, fern clad rocks, with "rustling rills," crossed here and there by rustic bridges, on the one hand; and on the other, an elegantly kept lawn, intersected with walks and roads, and garnished with tastefully arranged flower beds. The grounds cover a series of undulating swells. Many of the rocks are left projecting above the surface, and with the smoothly cut surface of the grass, the common phrase, "a sea of green," is much more appropriate here than as often applied. The art of the landscape gardener has been very well used to break the abruptness of the passage from the wild woods to the cultivated garden grounds, by the employment of masses of Rhododendrons along the borders. No plant is so well adapted to this. We never see Rhododendrons in their native mountains, covered with their gorgeous blossoms, but it seems like the remains of some ancient garden, abandoned by man, and which had been left to grow up with forest trees between them. The garden proper has evidently no strained effort for landscape effect, but is chiefly arranged so as to have the best results from flower gardening. The flower beds are so planned as to give a cheerful variety along the sides of the walks as one progresses through the grounds. In some places being distributed thinly, and in others arranged in complicated beds, in which the harmonies of masses of color in flower or foliage were well brought out. In these beds the usual well-known leaf plants were freely used; and among the flowering plants the chief reliance was on the various striking varieties of Zonale Pelargoniums. The tricolored-leaved and silver edged came in particularly well, which made a Philadelphian regret that the hotter suns of that region prevented such use at home. The Double Geranium, Mad. Lemoine, did here remarkably well as a bedder. The golden variegated form of Abutilon vexillarium, came into excellent use in Mr. Gray's gardening.

On these grounds are some majestic willows, which brought the suggestion that much more use might be made of this extensive family than is done. These were of some broad shining leaved species—perhaps Salix lucida or S. pentandra—and had trunks and head as large as oaks.

Those of us who have been accustomed to measure the rare evergreens as worth their weight in gold, looked with some astonishment on a long and well formed hedge of the Japan Retinospora obtusa, about four feet high, and several thick. This is much prettier than a hedge of either the Chinese or American arborvitæ. It is rather astonishing that this beautiful evergreen is so scarce. It is intensely hardy,—keeps green in the severest weather, not browning as some arborvitæs do, and is very easily propagated by cuttings. It ought by this time to be a standard stock in every nursery of any pretension. Speaking of evergreens reminds us of seeing here also a beautiful specimen of the Abies Engelmannii, of which we have recently spoken in our western recollections as being by far the most beautiful of all the coniferæ of the Colorado Rocky Mountains. We have often noted that in nature we never see trees as beautiful as when under the hands of art. This specimen, about three feet high, again illustrates this; and after seeing it we are still more anxious to see it extensively in cultivation. To call it a steel-blue Norway spruce, will hardly give an idea of the tree; but still it approaches to it.

Much use is made here of tropical leaved plants. A fine plant of the Musa Ensete was among them, thriving well in the open air. It is quite likely most of us have been deceived as to the hardiness of the banana family. In Germantown, last year, we saw the Musa Cavendishii growing as luxuriantly in the open air as a corn plant,—but the leaves split by the wind. According to our recollection all the leaves of Mr. Gray's Musa Ensete were perfect. Wigandia Caraccasana was here also among the most effective of fine foliage plants.

A ride out to the nurseries of Hovey & Co. told the story of the great change which is taking place in the nursery trade of the city. When here, some years ago, the main attraction was the hardy tree and shrub department. The plant houses were filled with novelties, but these were secondary to the out-door department. Now the glass department had shown a wonderful increase, while the out-door department had remained pretty much as it was. The glass is, of course, for cut flowers, and of these the rose is the leading item. The plants are on the open ground under glass, and the heating by hot water pipes. At our visit, (September) the roses had been all cut in, and were being kept warm and close to induce an early pushing into growth. The pear trees, for which Mr. Hovey was always famous, were still as healthy and productive as ever. They were originally dwarfs, but the pear has, in most instances, thrown out roots over the quince. Still the trees do not grow as tall as if they were originally on pear roots, by any means; but are what, if one were speaking of apples, might be called half dwarf. The trees are about twenty-five feet high. They are only about ten feet apart, and are set on each side of a narrow grass cart road, under which very cool surface the roots run riot near to the surface. The ground outside of the grass walk, on the other side of the trees, is simply hoed and raked, occasionally, to keep the weeds down. It is impossible to picture trees more healthy and productive than these trees; and we left wondering more and more how fruit culture, so simple and easy when understood, should ever have had so much costly mystery thrown around it; and we felt more than ever satisfied that if in aftertimes, the writer's countrymen should think it worth while to look back on his life to see what he had done for them more than others, he could wish no better remembrance than his exertions for them in this line.

OBITUARY.

ROBERT MORRIS COPELAND.

This distinguished landscape gardener and author, died recently in Boston from injuries received accidentally some weeks before at Ridley Park, in his 44th year.

He was educated at Harvard, and his great love of nature led him to choose the profession of a landscape gardener and engineer, in which he was highly successful. His "*Country Life*" first brought him into popular notice, and this work is still one of the most popular on taste in rural affairs. When the war broke out he entered the army, and was, for a time, on the staff of General Banks. Recently he has been known in connection with the great work at Ridley Park, a suburban town to connect with Philadelphia, where his talents were fast taking shape in one of the most beautiful places ever designed. His enthusiasm in whatever he undertook was boundless, and with splendid natural and cultivated oratorical gifts, he had the rare power of gaining friends to artistic propositions in quarters usually not open to other than mere monetary considerations. He was chairman of the Landscape Gardening Committee on the Centennial, and just the man to inspire enthusiasm in quarters where apathy to the good work would else prevail. One of the most striking points in Mr. Copeland's character as a landscape engineer was his endeavor always to look at solid foundations for his work. While many in laying off a town, would look at little more than the sale or arrangements of the lots, he would insist on, first and above all, good roads, and good conveniences of every description. Too many persons are led into purchases of rural sites, expecting perhaps to spend ten or twenty thousand dollars, and end by being embarrassed through having to expend twenty or forty in roads, drains, and many other matters. In a large number of cases these are never done; and a settlement often remains for years a mere mud-hole, and frequently retrogrades, because these things were not at the first done. Few landscape gardeners have the nerve to insist on these things. Indeed it is too true that the purchasers are too often not educated up to the point of understanding the value, and therefore are unwilling to pay for such work in advance of their experience of the want of it. It is therefore often the case, that investors on such principles do not always get their money back easily; and, therefore, those who, like Mr. Copeland and his friends at Ridley Park —a place being worked on this idea—boldly endeavor to carry out this excellent principle, are more than usually entitled to public praise. Mr. Copeland's death is especially, on this account, a public loss. We have too few of these fearless public educators.

EDITORIAL NOTES.

Our Present Number.—We trust our readers will believe us when we say that no pecuniary compensation we have ever received, or are likely to receive from the *Gardener's Monthly*, would ever induce the editor to give the time to it he does, were it not for the belief that he was also freely contributing to the advancement of practical and scientific horticulture in this country, where every thing is so new, and where thousands who might enjoy the pleasures of gardening hardly know what real gardening means. There have been times when his labors were disheartening; when publishers questioned whether it was worth while to help horticulturists who cared not to help themselves; when he himself was working year after year at the editorial desk without a dollar of compensation; and when in reply to requests for assistance in his labors from wealthy horticulturists who were supposed to have the interest of horticulture at heart, he would be told that "brain work was worth something to them." There have been such times when he has asked himself whether it was worth his while to continue on as he was doing.

The past two or three years, and especially the last part of the period, has brought the happy answer. At no time have we been so cordially, so intelligently, or so disinterestedly supported. Our present number is one which we feel especially proud of. Mr. Taplin's orchideæ article shows how the taste for orchids is growing in this country,—a taste he has himself done so much to stimulate by his writings, and by the excellent culture he gives his plants, and which makes a journey to his grounds always so delightful. The articles on Pruning, by Mr. Zimmerman and Mr. Pitts, for clear, practical common sense, equal anything that have ever appeared in our pages. President Strong's article especially, pleases us, as it brings up the question not yet fully decided as to what causes the hardiness of plants, and suggests in no unmistable light, that for hardiness we have to look to other causes than the latitude of the country, or the degree of the thermometer. Shelter from sun and wind is essential to some things; and above all excellent facilities for *nutrition*, for food is life, and life is health. In connection with this subject is Mr. Templin's article, written in one of the best spirits we have ever seen a controversial article treated. If only writers would always be as careful to get sound facts to work on, horticultural science would make rapid progress. Some of his points are very plain, and carry conviction with them. If conviction of the truth of his views do not come to every reader, it is not because his facts are controvertable, but because there are others which seem to oppose them. Lovers of taste will derive pleasure from T. A. S.'s vase plants. Though there is nothing learned in it, there is just that which thousands want to know. With the native fern article came a letter of apology that perhaps it was too much like an advertisement; but its influence in drawing attention to the culture of our beautiful hardy ferns, overrides all such considerations. The short essay on cracking pears is by one of the most intelligent and successful of the pear growers of America. His orchards are not large; but few grow fruit so well. In this connection Mr. Huidekoper's paper is very suggestive. An article that will attract universal attention on account of its great bearing on social progress in its highest phases, is that by Mr. Poppey. We shall be much mistaken if this paper does not receive from intelligent horticulturists more study than any thing that has appeared in a horticultural journal for a long time; and the one on gardening and gardeners can be read together with it to great profit. The subject of shade trees in cities is one just now attracting more than usual attention; and Mr. Sutherland's article is a very timely one; and the floral notes of our Reading correspondent will be welcome, as all her notes are to her many lady friends. Mr. Harding's graceful tribute to Mr. Elliott pleases us. Few men have worked more disinterestedly for the advancement of horticulture than Mr. Elliott. He has made mistakes, but then he has suffered for them. Indeed if he has ever made blunders, they have always been with the intention of doing good. Men who do nothing may deserve praise, but we doubt it. We know what he does, and thank him for it. And lastly we have to return our best thanks to our good friend, who, though personally unknown to us, has shown his good will to American horticulture by sending a note—all the

way from the North Seas—for publication in our magazine, on one of the most beautiful of plants suited to our out-door tropical gardening—the Gunnera scabra.

No one—unless he has worked for American horticulture fifteen long years in one line, as we have worked—can tell how welcome this excellent support is; and it affords us ground for hope that we may yet see horticulture as intelligently pursued, and as highly honored by America as by any country in Europe.

Alpine Plants.—We note in the English papers that all attempts to cultivate the new American Primula Parryi have failed. This has, we believe, been the case generally in this country. Some seed given the writer in 1870 by Dr. Parry grew, and struggled along through a season, and finally died. In the spring of 1873 the writer shook out a few seeds from a Herbarium specimen gathered on Pike's Peak in 1871. Though two years old they germinated well; but only one got through the summer, and is still alive, though the whole plant is yet no larger than a pea. Just as we were wondering how to manage it, a note from Dr. Parry says: "I have succeeded at last in growing and flowering Primula Parryi. I watered it continually with snow-water." There is a valuable hint here. Last year the writer saw masses in beautiful flower; but just below the snow line, and close along the edges of the mountain stream from the melting snows above; and Dr. Parry's hint with our own observations lead us to the conclusion that to grow this, and all alpine plants well, the conditions must be an abundance of light, very cool soil, and a humid atmosphere. A warm atmosphere will not hurt them. A sunk pit in the summer time would be the best place to grow alpines in. We have been coming to this conclusion for some time. The beautiful English Auriculas will not live out in our summers, but do well when kept in a frame, the pots on the ground.

The American Aloe.—The London *Garden* figures and describes a fine specimen of *Agave Americana*, which flowered in open air in South Devon, in October last, and says: "It was forty-five years of age. Began to show indications of flowering in May. The flower-stem subsequently grew three to four inches in a day, but slower afterwards. It was over four inches in diameter, reached a height of 25 feet 6 inches, and bore 6,000 flowers. The leaves were 6 feet long.

It is a general belief that this flowers only after a hundred years of growth and, hence is known as the "Century plant." Much of the period depends on how luxuriantly they are grown. In the vicinity of Philadelphia several have flowered during the past twenty years, none of which, it was believed, were over fifty years. In their own country they flower in much less time. Hedges are made of the plant in Mexico; and at the present time they are discussing in Australia whether it is not a good substitute for the Osage Orange, which has been tried there on a grand scale, but with which they are dissatisfied. The only objection made to the Agave is that it "takes much room." It would be a remarkable sight—a hedge round a farm. We once saw a farm in the west fenced completely by stumps of trees drawn out by a stump puller; and even that gave a very peculiar character.

Varieties for Southern Maryland and Northern Virginia.—The Potomac Fruit Growers' Association recommend for the Potomac region the Edward's Early (do any of our readers know it?) Red Astrachan, Smith's Tewksbury and Winesap apples; the Beatrice, Early York, Old Mixon, Heath, Smock, Ward's and Fox seedling peaches; the Delaware, Hartford and Concord grapes; and the Early Sugar, Bartlett, White Doyenne (sugar), Duchess d'Angouleme, Vicar, Beurre d'Anjou, Buerre Easter and Josephine de Malines pears.

Boussingaultia Lachaumii.—The *American Agriculturist* devotes a column and a half of small type to abuse of the *Gardener's Monthly*, for pointing out the fact that what the *Agriculturist* Company, in a recent issue of a "list of wood cuts for sale," calls *Boussingaultia Lachaumii*, is nothing but *Talinum patens*. It acknowledges that we are right in the correction; but says that Donald G. Mitchell made the mistake first in the *Hearth and Home*. It elegantly says that Mr. Mitchell can settle this with the "G. M., which may mean either Grand Mogul or *Gardener's Monthly*," which ever the reader pleaseth. It is not clear to us why a mistake which "originated in the *Hearth and Home*" should be continued in a catalogue of Orange Judd & Co., years after Donald G. Mitchell's time; and only that we deprecate the use of abusive language in the discussion of such innocent questions as these, we might, slightly altering our cotemporaries expression, say that "Mr. Mitchell can settle this with the A. A., which may mean Arrant Ass or American Agriculturist."

SCRAPS AND QUERIES.

COLEUS "NELLIE GRANT," OR DR. GROSS.—In reference to a paragraph in the last issue of the *Gardener's Monthly*, we have the following:

"In regard to the Coleus, called by us the Nellie Grant, we never claimed to have originated it, as we never recollect to have grown a seedling Coleus at our establishment. Several parties claim its origin; one a respectable gardener to a gentleman in this neighborhood, grown by him from seed, and amongst other Coleus cuttings given to our Mr. Miller last spring,—this was included. Another, a florist of character in our city, who, for several years, grew a great variety of beautiful seedlings, claims it as identical with a seedling grown by him several years ago. Another, a firm of standing in Pittsburgh, claims, by an advertisement last month, to have sent it out some two years ago, giving it the name of Dr. Gross. Still, another young man, in our employment, now claims to have originated it when employed by a Pittsburgh house some two years ago, grown by him from a sport of Queen Victoria, and that he introduced two plants of it in our collection unnamed; and if so, certainly unauthorized and unknown to us. It is improbable that all the above named are the originators; and, therefore, one only of them, or some other person must have been. One thing is certain, it appeared in our collection last summer *unnamed;* and when growing, attracted our attention as an acquisition to this favorite bedding plant, being quite distinct from any variety we had seen. Believing it to be entirely new, and never recollecting to have seen or heard of one called Dr. Gross, or any other named one answering its description, we were led from its attractive appearance to grow specimens, and show them at the Pennsylvania and Germantown Horticultural Exhibitions; and for want of a better, we applied the popular name of Miss Nellie Grant. Had we known it by the name of Dr. Gross, (plants of which to this day we have never seen) or any other, we should certainly have so called it.

"Yours very truly,

"MILLER & HAYES,

"*Mount Airy Nurseries, Phila.*"

FORMS OF MELIA AZEDERACH.—*Mr. S. B. Buckley, Austin, Texas*, writes: "I see in the *Gardener's Monthly* of March, that you assert that I proposed to make a new species of the Umbrella China tree. The truth of the matter is this: I described this variety of Melia in *Rural Alabamian* as a peculiar form of Melia Azederach, which it is; and at the close of the article I stated that, should it prove to be a new species, and continue its peculiar characteristics, why then let it be called *Melia umbrella.*

"This is the sum of the matter. I have not my article here to refer to, but I am confident I went no further; hence, you have done me injustice, both in a former number of the *Gardener's Monthly*, and also in the present number for this month."

CURRANT WORM.—As our correspondent has, no doubt, some additional observations, we should be glad of the "writing out in full," referred to in the following: "Your correspondent, G. H. B., seems to be in a bad plight with the currant worm There are a great many so-called effectual remedies, such as air slacked lime, carbolic acid, white hellerbore in powder, and wood ashes.

"My experience with the currant worm began in 1866, and I did not have currants again till I applied a remedy of my own. It is made with kerosene, whale oil, soap and water. It was published in Tilton's *Journal*, July number, page 23, 1870. Again September, page 176, 1870. Again July, page 213, 1871. If you would like to have me write it out in full, I would be glad to do so. It not only kills the worm, but cleans the bushes of other insects, and invigorates the plants, as has been shown by the fine show of fruit every season since 1870.

LANTANAS.—We are much obliged to a Whitinsville correspondent for the following modest but excellent note. We should be glad to hear from him often: "Please excuse me for taking the pen to try to enlighten others, while I, of all others, need light. In the *Monthly* for January, Amateur makes a few remarks on growing Lantanas. I have grown two plants the past five seasons, beginning with the present time. I have one plant with a clean, straight stem 3½ feet high, nearly 3 inches through at the but; top about 2½ feet through; just breaking.

When I cut it back and took it up last fall, it was about 8 feet through, and as high. I am now growing a number of the finer sorts to grow in the same way for summer decoration. I do not know of anything that makes more show all the season than the Lantanas grown in this way. As they lose their leaves in the fall in taking up, they can be kept in a cool cellar or greenhouse shed."

HEMLOCK HEDGES.—*A Vineland, N. J., subscriber* asks: "My hemlock hedge does not grow evenly, some portions of it being much more vigorous than others. How shall I remedy the evil? Can I apply any special fertilizer to the most weakly portions? and if so, what shall it be? A reply will much oblige an old subscriber to your *Monthly*."

[The suggestion made is the best we could give—manure the weaker ones. The manure should, however, be very well decayed. There is a supposition prevalent that manure is bad for evergreens. This is true of *fresh* manure, but not of well rotted. We have noticed the excellent health of evergreens under which fowls roost. This would indicate that a light dose of guano would help such trees as those our correspondent inquires about.—ED. G. M.]

TORREYA TAXIFOLIA.—*H. W. P., Memphis, Tennessee*, writes: "Enclosed I send you a slip taken from an evergreen growing in my grounds. I am of opinion it is Cephalotaxus, but it has been questioned by good authority; and I would be obliged if you would name it, and answer through the *Monthly*."

[You have a much more desirable plant than the Cephalotaxus. It is Torreya taxifolia, named of course after the late Dr. Torrey, and a very desirable evergreen shrub for the south and south-west.—ED.G. M.]

WEEPING TREES.—The *Western New Yorker* says: "Will Mr. Meehan inform us, in the next number of the *Monthly*, why he failed to place at the head of his list of weeping trees, or even to mention it at all, the cut-leaved weeping birch, which we had supposed to be the most beautiful of the weepers?"

[We have no great admiration for cut-leaved trees. The thing has been over done about Philadelphia. Nearly every tree in the city is "cut-leaved"—made so by measuring worms, and others such like. We rarely see a cut-leaved tree but we look for the caterpillar. Still we have no objection to others' tastes, and cordially endorse the *Western New Yorker's* suggestion, that there is no tree more beautiful than the weeping cut-leaved birch for those who like such things.—ED. G. M.]

PINK POND LILY.—Mr. Cruikshanks, of Whitinsville, kindly furnishes the following information: "In the *Monthly* for the present month, (April) you reply to a correspondent that the Pink Pond Lily is probably the Egyptian Lotus. There is a Pink Pond Lily growing near Falmouth, in this State. I had some seed given me a few years ago, but it had been kept too long before I got it, so that it was all rotten. But I believe there are some roots in a pond in this town. D. T. Curtis & Co., Boston, offered roots of the Pink Pond Lily for sale last spring.

BEGONIAS FOR WINTER FLOWERING.—*Mrs. B. F. K., Brooklyn, N. Y.*, writes: "In my small conservatory the best flowering plant I had this winter was Begonia hybrida multiflora. I am so pleased with it that I should like to add to the variety if there are others which would do as well. Can you give me a list of any that you think I could grow as easily?"

[Begonia incarnata is a very free flowering kind, and comes in before B. hybrida multiflora. After this comes in B. Sandersii,—and then, towards spring, follows B. Weltoniensis. These four make a good succession, and are of easy growth.]

EXCELLENT SUGGESTIONS.—Mr. John Quill sends us two articles which have some excellent points. In one he tells of meeting in the backwoods of Kentucky, where no one would expect to find flower culture to any great extent, a beautiful garden filled with choice flowers, which the lady had gathered together chiefly by seeds ordered through the mail. It is very gratifying to know that in these far away places flower culture is so much cared for.

In the other, he tells of the good results of encouraging a taste for flower culture on two unruly boys. The gift of some garden books, seeds, plants and a piece of ground, changed the whole course of their conduct, and led to admirable results. It is to be regretted that these excellent methods of aiding children in physical and intellectual pleasures are not more often employed,—

and we thank Mr. Quill for calling our attention to them.

SUPERFŒTATION.—*Charles Arnold* writes:—"In the October number of the *Monthly* of last year, page 303 Rev. L. J Templin says: 'As to the law of superfœtation further evidence seems to be needed to set aside the many objections that seem to lie with great weight against it.' Having been, until the last year or two, an unbeliever in this 'law' myself, it would ill become me to say one unkind work to those who still think as I have formerly done, and even now perhaps, I have my doubts about it being a principle applicable to the whole vegetable kingdom; and have never for a moment thought of its being an absolute law, necessary for the perfecting of the seed or fruit, but merely that nature has no law against it, and feel quite confident that in corn, the male or pollen influence is completely prepotent upon the embryo grain, and that particles of pollen from two or three different varieties of corn will be as acceptable to the pistil as though pollen grown upon its own stalk had been used alone.

"As a proof of this, I appeal to every reflecting observer that has ever grown two or three different varieties of corn together that have come into flower at the same time.

"I have sown white sweet wrinkled corn, and early in the season removed its own pollen and supplied in its stead pollen of common yellow and purple corn, and in gathering the corn when ripe I did not find one solitary grain of white wrinkled corn, but yellow corn and purple corn in the same ear, and frequently yellow grains striped with purple.

"Now, I would like to ask Mr. Templin how he would account for this striped corn, if it is not attributable to the prepotent influence of the two substituted varieties of pollen? I would also like to know what are the 'many objections' he alludes to. If, as some of our closest observers inform us, several separate particles of pollen are necessary to perfectly fructify one pistil, and if the pollen grains of the many different varieties of the same species are so near alike in every respect, the 'many objections,' it seems to me, are in the imagination only. It is asserted by very high authority that by an established law, one class of our hive bees have no fathers. One would suppose it quite as difficult to comprehend how the drone bee could come into existence without any father, as for a grain of corn or any other seed to have two fathers."

INTERNATIONAL EXHIBITION IN ITALY.—The Secretary of the Royal Horticultural Society, of Tuscany, sends us a circular in regard to the horticultural department of the exhibition to be held in Florence in this present month of May—too late for us to help it by calling attention to it. It promises to be a grand affair. The horticultural department will open the exhibition. Water plants, including the Victoria Regia, promise especially great attractions. A Botanical Congress will sit at the same time, in which the venerable Bertholet will take part. The cream nut, or "Brazil nut," Bertholetia excelsa, was named in his honor. Many other distinguished scientists and horticulturists have promised to be present. There is no doubt but that the horticulturists of that part of the world intend to make their portion of the exhibition at least one to be remembered, and though this notice is late for their purpose, it may serve to show our people how intensely interesting they may make their own Centennial Exhibition in 1876.

UMBRELLA PINE.—A correspondent inquires what pine this is mentioned in the interesting letters of Mr. Sargent. It is the Sciadopitys verticillata. We know of one plant that has stood in the vicinity of Philadelphia for some years, entirely unprotected. While young its growth is very slow, though we believe rapid when some fifteen years old. The plant referred to was raised from seed brought by the Perry expedition, and is now but a foot high.

GREENHOUSES OF THE ST. LOUIS NURSERY COMPANY.—A correspondent from Henderson, Ky., says: "I paid a visit to St. Louis a few days ago, and called in to Jordan's Nursery, and was very much surprised and pleased to note the extent and beauty of their collection of plants. They have twelve large greenhouses densely crowded with the choicest of stock, which would amply recompense anybody's visit. Their polite superintendent, Mr. W. G. Newitt, formerly of Evansville, Ind., conducted me through the premises, and spared no pains to show me his beautiful stock. It reminded me of large English nursuries, when on entering their large show-house, I beheld such an exhibition of most valuable plants, and all in such excellent

condition, such as several varieties of Maranta, Dracœna and Calocasia; different Palms and Pandanus, and one immense specimen of the Latania Borbonica. Their collection of Ferns seem perfectly unapproachable, composed, as it is, of the rarest and choicest sorts. It would be hard to find a finer display of both foliage or flowering plants in the country, than may be seen there. And I can cheerfully commit any of your readers, visiting St. Louis, and wishing to see a splendid collection of plants, to the polite attention of Wm. G. Newett, Esq."

LAUREL OAK.—A St. Louis correspondent calls attention to the great beauty of this native oak. We suppose he refers to the Quercus imbricaria, which is abundant about St. Louis, and well worthy of the great admiration he expresses for it.

NATURAL INARCHING.—*T. T. S., Dansville, N. Y.*, writes: "My attention was called, a few days ago, to a freak of nature, a description of which I thought might interest you. Near this place are a couple of white oak trees—one about 18, the other 16 inches in diameter. At the surface of the ground they are full 20 feet apart, and leaning toward each other, meet at the centre of the space. Some twenty or twenty-five feet from the ground they are joined, and form one perfect solid trunk, one body having grown completely into the other. Above the point junction is one tree. This natural grafting may not be uncommon; but being the first thing of the kind I ever happened to see, it impressed me as being very novel."

[This is certainly a very novel case of natural inarching, and we can offer no suggestion as to how it was brought about Some years ago the late Dr. Darlington took the writer of this to a tree with one head and two trunks. But the two "trunks" were not more than two or three feet above the ground before the union took place. Dr. D. supposed it was done by art and not by nature, although in a wild place.]

WEEPING TREES.—*Mr. P. Barry* writes: "In the March number of your Magazine—'Hints for March'—you refer to weeping trees, and among others of two new weeping beeches, one a "blood-leaved weeper." May I ask you where this has been noticed? You did not mention the weeping varieties of the birch, which I think are among the most graceful of this class of trees. There is a new blood-leaved variety from France, which our nurserymen will propagate this season. If it comes up to the description, it will be an acquisition.

"The Weeping Honey Locust (Bujoti) is a charming umbrella shaped tree, but it is not *quite* hardy enough for *all* our winters. I think it won't stand at Philadelphia. Have you tried it? The Weeping Linden is a beautiful tree—worthy of more attention than it receives.

"Mr. Sargent's notes from Europe are very interesting. I can hardly resist the desire to run over the same ground. Pinus Coulteri will not stand our climate, nor will Sabiniana. I got both more than twenty years ago. I have some ragged specimens of Sabiniana left. I saw acres of it in California."

[The notes we made of the blood-leaved weeping beech were taken last summer from some French magazine, we believe, but do not now remember where. We have not seen the Weeping Honey Locust.]

HARDINESS OF ROCKY MOUNTAIN PINES.—Mr. Robert Douglass sends some beautifully fresh and healthy specimens with the following remarks. They are not, we believe, written with a view to publication, but Douglass is too good a fellow to want to keep back an idea that may help his fellow-horticulturists:

"I send you, by mail, a few branches of Abies Menziesii, A. Douglasii, Pinus ponderosa and P. contorta, taken from trees that were brought from the Rocky Mountains when small, and planted by W. E. Barnes, Vineland, Kansas.

"Mr. Barnes reports them perfectly hardy, having stood, without injury, for several years. Mr. Edwards, of La Moille, Illinois, and Mr. Whitney, of Franklin Grove, Illinois, have fine specimen trees of the two spruces named above; they report them perfectly hardy.

"I have watched these trees with considerable interest for three years, as I think they will prove more hardy than trees of the same species grown from seeds collected on the Pacific Slope. I am led to this belief from the fact that no trees of the two first named, so far as I can learn, brought from any other source, have ever stood in our climate so long as those named above.

"You will notice the great difference in the two samples of Douglasii. The specimen with the largest buds makes a round headed compact tree."

BOOKS, CATALOGUES, ETC.

TRANSACTIONS OF THE ILLINOIS HORTICULTURAL SOCIETY—NEW SERIES, VOLUME 7.—This volume contains the essays, discussions and papers of the several societies into which the State is divided, and is filled with much valuable matter which cannot fail to be of interest to farmers and fruit culturists in Illinois and elsewhere. The facts gathered together in this report are among the most valuable of any we have seen. If societies in general were to be careful to insist on positive, well ascertained facts, and continue to gather them together, year after year, we could soon establish rules or principles which would benefit us all. The misfortune is that people take mere impressions for ascertained facts; and once imbibing an impression, never think, or care to think that any thing further is to be done about it. For instance, one man has a tree in cultivated ground and it is diseased,—he sees another man who has one in grass and it is healthy, and he at once concludes that to have trees healthy they must be grown in grass. Another man shows that he has trees in cultivated ground and they are healthy. One would suppose that this fact would have some weight with the first observer, but it does not. He fights for grass through all the discussions. He learns to care more for his opinion than for any amount of facts.

These reflections occur to us very strongly on reading this report especially. It is very difficult to arrive at truth on any horticultural topic because vegetation is influenced by so many causes. No one cause is sufficient to account for phenomena in most cases. Moreover, a cause which is equal to an effect at one time may not be at another, because in the mean time some other cause intervenes to prevent the operation of the first. We think that if our Illinois friends will keep these truths in mind there will not be as many contradictory "opinons" as occur in this volume, and which must puzzle the new beginners who look to such volumes as these for guidance in their young operations.

In timber culture several interesting scenes occurred. Some people have had a hobby for years past, that trees have a tremendous influence on the rise and fall of nations through their action on climate. The writer of this ventured to question the soundness of this view. He did not say there was not the influence claimed; but merely showed that, *scientifically* considered, the arguments were rather flimsy, and declined to believe, until better reasons were offered him. Dissent from an orthodox view always was a crime; so here we read of a council to try Meehan, and the "resolutions on Meehan" are duly indexed by the Secretary. The venerable Arthur Bryant expressed himself shocked; and the preparation for the grand burning of the heretic at once commenced. Mr. Bryant threw a tremendous faggot around the stake, pronouncing a fearful doom on one whose "arrogance" led him to question the dicta of men whom he said were "his superiors in scientific attainments." Flagg threw in but half a faggot. Meehan's views were horrible; but he did not think he had been wholly understood. McAfee, however, was in his glory. He did not suppose Meehan could descend lower in absurdity than he had exhibited on former occasions; but his objection to the climatic views were infinitely more absurd. He was, however, "very glad Meehan had written as he had." He was "weary of the monotony" of sensible things, and rejoiced in the prospect of a real good old fashioned roast. As we read on of the infinite enjoyment the prospective sacrifice was giving him, we pictured him in all the glory of war paint and feathers, dancing around the funeral pile with a scalping knife in one hand and the torch in the other; but when we came to the part of his majestic appeal to the spectators, where he told them that his "Scotch blood" was up, our thoughts wandered from the scenes of three hundred years ago, to Donald McKay at the head of a band of modern Klamath Indians after the Modocs. He seems to have exhausted every effort to "vary the monotony." He even asserted that the "box tree of Isaiah the prophet, was, "no doubt," the *Negundo aceroides* of America; but still no one dared to disturb the "monotony;" and so for Meehan's sin he rejoiced with exceeding great joy. Then Douglass threw his faggot—somewhat reluctantly—for he had found Meehan usually intelligent, and hence wondered he was so superficial now. But one by one the fifty-six fathers gathered round, and were severally polled, when it was found that there were but six in favor of post-

poning the last sad solemn scene. They then "resolved" that Meehan was an enemy of timber culture, and here we close the story. Those who are anxious to peruse the horrid details of this awful sinner's execution, must go elsewhere; for lo! are they not to be found at page 306 of 7th volume, of the *transactions* aforesaid? It would be funny if "Meehan" should still live. He has already been twice executed by "resolutions" of the Cincinnati and Pennsylvania Horticultural Societies, during the past quarter of a century! Well, the *Gardener's Monthly* expects to live anyhow; and will still urge timber culture as it always has done, on grounds that every one can understand, and on which even a whole people may feel interested.

NEW AND RARE FRUITS.

PILOT APPLE.—In the *Gardener's Monthly* for March, a correspondent inquired for information about this apple. In the "appendix" to Downing's fruits, page 27, there is a figure, and the following history and description:

An accidental seedling, found on the premises of John Robbins, at the foot of Pilot Mountain, Nelson County, Va. Tree hardy, of moderate growth, forming a round head, rather slow coming into bearing, but when established produces large crops alternate years, and a few the intervening ones, and is considered a valuable variety in its locality; young shoots reddish-brown.

Fruit large, roundish oblate, slightly angular; skin pale yellowish green, shaded, splashed and striped with pale dull red nearly over the surface, and thickly sprinkled with large areole dots; stalk short, small; cavity rather large; calyx half closed; basin large, deep, smooth; flesh yellowish-white, fine, rather firm, tender, juicy, rich subacid, slightly aromatic; very good; core small. December, January.

THE CAMBRIDGE GRAPE.—This is a new grape, which has just been offered in Massachusetts. It is strongly recommended by Mr. Hovey, who says it resembles the Concord in many of the characters which give so much value to that popular variety.

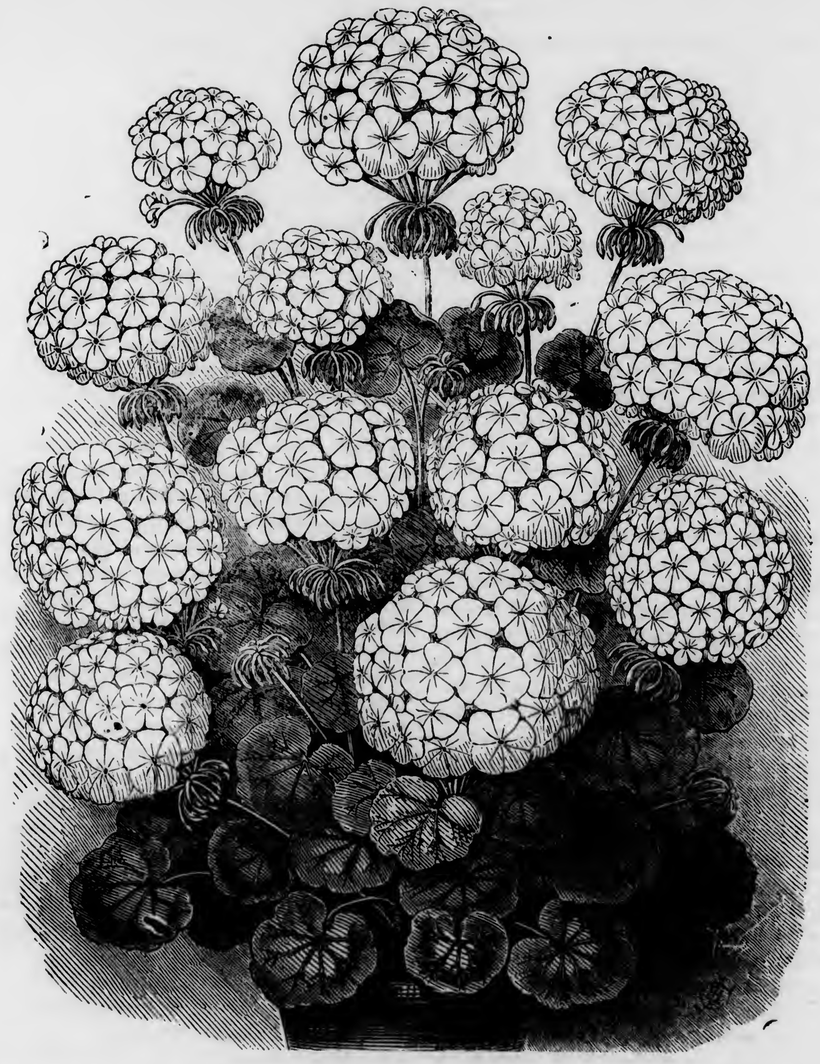
Mr. Hovey was the introducer of the Hovey Seedling Strawberry, which held a high place in public estimation for so many years; and also brought out the Concord Grape raised by Mr. Bull. These facts are worth remembering in connection with any fruit which they strongly recommend.

NEW AND RARE PLANTS.

PELARGONIUM, QUEEN VICTORIA.—This new Pelargonium is now being sent out for the first time. To say that it is handsome conveys but an inadequate idea of it, for it is the most marvellously beautiful and novel variety ever offered. The flowers have peculiarly crispy petals; they are not really double, but from their fulness of form and extra number of petals, have the appearance of being so. The color is a rich vermilion; all the petals broadly margined with pure white, and the upper ones blotched with maroon. The contrast of the broad white margin with the vermilion ground-color makes the flower extremely pleasing and attractive.—W. BALL.

PLANERA RICHARDI PENDULA.—This is the weeping variety of the Zelkona tree; it produces long pendent slender branches, which are pretty well clothed with leaves. It is grafted several feet above the ground, on the erect growing variety. It forms a handsome ornament either for lawns, pleasure-grounds, or parks.—*The Garden.*

ZONALE PELARGONIUM, MASTER CHRISTINE.—Every year we think it is impossible to produce geraniums more beautiful than any we have; but still better ones come. We think any one, after seeing the accompanying engraving of Master Christine, taken from a plant grown by Mr. Chitty, of Bellevue Nurseries, will admit that they have never seen any thing superior.



VERBENA, GLORY OF AMERICA.—This new verbena, of the blue style, seems to be highly endorsed by men who know what a good verbena is. It was raised by Mr. Comley, of Lexington, Mass.

CHAMÆPEUCE DIACANTHA.—This beautiful plant is known as the Fishbone Thistle. It has glossy dark leaves, with white nerves and brown spines. It is covered with white silky down, and is very beautiful.

NEW SEEDLING ROSES.—*Mr. E. Y. Teas, of Richmond, Ind.*, writes: "In your January number, page 28, under the head of "New Seedling Roses," you enumerate *Madame Vangert* as one that was certificated at the Lyon's Rose Congress. A letter from Eugene Verdier says that it exists only as an old variety, and did not appear at the Congress, of which he is a member. It was *Madame Marie Finger* (*Lacharme*) that received the certificate.

It may interest your readers to know that only two of the four certificate varieties, viz., *Capt. Christy* and *Madame Marie Finger*, have been offered for sale; the remaining two will not be in market for some months. At present there is such interest taken in good introductions, that I think the mistake should be corrected. Should the bud—now set—open well, I will shortly send you a bloom of M. Marie Finger.

PRIMULA VERTICILLATA.—Under the name of P. involucrata we have a beautiful light yellow species from Mr. Geo. Such. The flowers are sweet scented, and the corolla has a very long tube before throwing out its spreading limb. The leaves are powdery, somewhat similar in this respect to the P. farinosa.

IRIS IBIRICA.—We have some blooms of this from Mr. H. E. Chitty—the first we have seen. It is a grand species. The three outer petals are very broad and round, and of a mottled brown, with a deep black spot in the centre, reminding one of the lower lip of an orchid. This idea is strengthened by the bending down over them of the foliaceous pistils. The three upper petals are erect, and of a pale white, with feathery purple veins. It is one of the most interesting Irids we know.

NEW DOUBLE-FLOWERED PELARGONIUM (CAPTAIN RAIKES).—We are unable to tell now that our botanists have determined that Geraniums and Pelargoniums are all one thing, so do not know to which of these sections the following from the *Garden* refers to: "This variety will be found at once the most beautiful and useful Pelargonium ever sent out, more especially for bouquet makers and market purposes; in fact, its blooming properties, at all times of the year, both early and late, are so extraordinary, that it may, with all justice, be termed a perpetual bloomer. This Pelargonium belongs to the French type of flower, and on account of the blooms being double, the petals do not readily fall when cut for bouquet-making. This fact alone will render it simply invaluable, whenever cut blooms are required, at all seasons of the year. It is of a vigorous, free-branching habit, producing large and ample dark green leaves. The trusses of bloom are borne well up above the foliage, and are both numerous and large, whilst the individual flowers are large and full, upper petals deep fiery crimson, flaked with purplish black and bordered with carmine; lower petals clear, bright, fiery crimson. It has been awarded a First-class Certificate by the Committee of the Royal Horticultural Society, and also a Special Prize at the Great Horticultural Exhibition at Manchester, where the blooms retained their full beauty, and without any petals dropping, for a whole week.

ROSE MARIE BAUMANN.—This rose, if I remember aright, was sent out in the autumn of 1863; very few of the trade in this country were fortunate enough to secure it the first year. I bought it, and, after getting up a good stock, exhibited it in my winning stands at the principal rose shows in 1865. There was no doubt about its being much admired, as very many of the largest growers requested me to let them have a supply. I have ever since grown it every year in very large quantities, and must say that I have always found it a good free grower and quite sufficiently vigorous; and, what is very important, it produces plenty of blooms of the very first quality in size, shape and color—in fact, it never gives a bad one. I ought, perhaps, to mention that mine are all maiden plants, but I have seen it equally fine on older. I wish any of those who deem this rose an indifferent grower could look at my stock of it next summer, I am sure their opinion would undergo a change.

By post this week I had a letter from an amateur grower at Whitby, speaking in the highest terms of Marie Baumann. Even so far north, it grows and flowers beautifully.—BENJAMIN R. CANT, *Colchester*, in *Journal of Horticulture*.

PENTSTEMON PALMERI.—We have received from Mr. Thompson, of Ipswich, specimens of Pentstemon Palmeri, of Gray, a very distinct new kind, remarkable for its short inflated corolla and long lobes of the lower lip. Only side branches and flower-spikes have reached us; but Mr. Thompson informs us that the inflorescence, which is of a delicate peach color, occupies quite 2 feet in length of the main stem. It comes from Arizona, and probably also occurs in other Western American States. The foliage, which on the flower-stems is connate, is of a glaucous hue, and petiolate on the side branches. It is evidently a robust-growing plant, reaching, when in flower, to a very considerable height; therefore, when the large number of flowers it produces is taken into account, it cannot fail to be a showy plant, either in the herbaceous garden or shrubbery border.—*Garden*.

A NEW HARDY BAMBOO.—Under the name of Bambusa sulphurea, M. Carriere describes a perpectly hardy species of Bamboo now growing in the Jardin l'Acclimitation, in Paris. In general appearance, it resembles B. viridiglaucescens, but it is not so vigorous; the stems are somewhat spreading, and of a fine sulphur-yellow color; the leaves are of a light-green on the upper surface, and glaucescent underneath. M. Carriere states that he has never known this species to vary. Unlike the other yellow-stemmed kinds, which are very tender, it requires no shelter in winter. It was first introduced about 1865.—*Garden*.

VERNONIA NOVEBORACENSIS.—This vigorous growing perennial is now producing rosy-purple flowers in abundance at Kew. Although the stems are somewhat naked, it might be used with good effect in shrubberies along with such Asters as Novæ Angliæ, or among vigorous perennials in semi-wild situations.—T., in *Garden*.

[This is the common "Iron Weed" of the Middle States.—ED. G. M.]

FOREIGN INTELLIGENCE.

NOTICE OF MR. RIVERS.—Mr. Rivers' history is that of most men who have achieved success in their undertakings by constant and unremitting attention to their work. He was not born with a silver spoon in his mouth, and to this fact much of his success is probably due. He inherited a small property, and a business in which his enthusiastic love of plants enabled him to foresee a great development. When he began to turn his attention to his profession, rose cultivation was in a very different position to what it is at present. Standard roses being principally imported from France, and in small quantities, he determined to visit France and examine the French mode of Rose culture for himself. The success of his earliest literary effort, "The Rose Amateur's Guide," established him at once as an English cultivator fully equal to the French in love of the flower and in skill in its cultivation. The book, in manuscript, was submitted by him to one of his earliest rose friends, Professor Jones, of Haileybury College, then one of the most profound scholars of the day. Dr. Jones' approval was at once accorded, and "The Rose Amateur's Guide" was received by the public as it was received by Dr. Jones. While pursuing his rose researches, the pyramidal mode of fruit tree training, as universally-practised in French and Belgium gardens, attracted his attention—always keen on matters likely to prove of general utility—and the "Miniature Fruit Garden," modest and small in its infancy, inaugurated a new era of fruit cultivation in English gardens. Although for years practised in France and Belgium, pyramidal fruit tree training does not appear to have been much employed in England until Mr. Rivers drew public attention to the extraordinary facilities given by this mode of culture. The frequent failure of the fruit crops led him to devise some simple and effective means of protecting fruit, and he hit upon the system of growing trees in pots. By very small degrees, and with constant experiments, extending over some years before finally giving the culture a name, he perfected the "Orchard House." Like the "Rose Amateur's Guide," and the "Miniature Fruit Garden;" the "Orchard House" began at the beginning. During the time occupied in developing his ideas on these heads he was constantly occupied in studying and forming large collections of fruits, and nearly every continental new fruit found its way to Sawbridgeworth, and most of them eventually to the fire heap. Mr. Rivers was at one time a most ardent cultivator of what are called ornamental trees and herbaceous plants; his collections of both were at one time very large, and

he was quite as enthusiastic a lover of these as of roses. Loudon gave him the benefit of his vast knowledge, and took great interest in his various collections; in one tribe, that of the oaks, his collection was unusually extensive. He has made good use of the "Orchard House" to endeavor to improve the varieties of peaches. The few sorts selected as worthy of naming have been taken from more than 1500 seedlings, and it may give some idea of the work done when it is stated that these were all grown under glass. Mr. Rivers has been a large employer of labor; a small agricultural village has by the continued employment of the capital required in carrying out his ideas—all of which necessitate labor—been benefited by the large sums annually spent.

Mr. Rivers, through failing health, has retired from active life, yet his mind is still active. Seventy-six years is a long measure of life for a man, but few men can look back with greater satisfaction than he can on a life worthily spent and deserving in every way of the commendation that, as far as lay in his power, he has been a good citizen of a great country.—*The Garden.*

ACALYPHA TRICOLOR.—Few plants excel this for stove decoration all through the year, and yet it is very seldom one meets with a good specimen. Its dark fine foliage has a very pleasing effect among other foliage plants in the stove. Perhaps a few remarks on the culture of this plant may prove useful to some readers of the *Gardener's Magazine.*

The beginning of March is, I find, a very good time for striking cuttings. The compost we use for the purpose is fine peat, leaf-mould and silver-sand. The pots we use for striking are the four-inch; they are half filled with crocks to ensure good drainage, filled within half an inch of the top with the above compost, and the remaining part filled up with silver-sand. The cuttings when put in are well watered, and are not watered again until they are rooted. The pots are plunged in a bottom-heat of 85°, with a top-heat of about 75°. When rooted they should be potted off singly into three-inch pots, and again plunged in bottom-heat, when in about three weeks they will again require shifting into five-inch pots. The compost we use in this stage consists of good turfy peat, loam, a little leaf-mould and silver-sand, to which is added a few potsherds broken up to the size of peas. As soon as they begin to take hold of the new soil, the necessary steps should be taken to obtain bushey plants by pinching out the leading shoots.

We find bottom-heat very beneficial to this plant, more especially in the growing state. If larger plants are required, I strong recommend employing bottom-heat, and they require potting as they advance, never allowing them to become pot-bound. This plant is very subject to green-fly and mealy bug. These little pests must be kept under, the former by fumigating, the latter by using a little Gishurst Compound and plying the syringe freely.

In the winter months they should be carefully watered, as drought is peculiarly injurious; but on the other hand, excessive moisture is equally injurious.

With the above treatment we find the Acalypha to give every satisfaction, and I may state, when well grown, it will prove a great acquisition for exhibiting purposes as well as indoor decoration.—D. WILLIAMS, *Darlington.*

POMONE.—M. Louis Van Houtte, of Ghent, has just issued the first part of his "Pomone," a remarkable work, devoted to the description of our cultivated fruits. The present number contains descriptions of 431 varieties of Pears, followed by colored plates representing fifty of the best kinds, which are figured by a degree of art and truth of which it is impossible to speak too highly. In addition to this there are outline figures of thirty-six other varieties. We have never seen anything approaching the beauty and accuracy of the colored figures, and we are happy to call attention to a work which we believe indispensable not only to all fruit-growers but to all lovers of fruit.—*The Garden.*

HOW FLOWERS BECOME NATURALLY DOUBLE.—At the May meeting of the Philadelphia Academy of Natural Sciences, Mr. Thomas Mechan observed that, on several occasions, during the past few years, it had been noticed among the variations in nature, that the tendency to produce double flowers was, by no means, the special prerogative of the florist to originate. Many of our commonest wild flowers, which no one would think of cultivating, had double forms in cultivation which were, do doubt, originally found wild. Thus we had a double Ranunculus acris, R. bulbosus, R. Ficaria, R. repens, and some others. There were, in plants, two methods by which a double flower was produced. The axis of a flower was simply a branch very much retarded in its development, and generally

there were, on this arrested branch, many nodes between the series forming the calyx or corolla, and the regular stamens and carpels, which were entirely suppressed. But when a double flower was produced, sometimes these usually suppressed nodes would become developed, in which case there was a great increase in the number of petals, without any disturbance in the staminal characters. But at other times there was no disturbance in the normal character of the axis. The stamens themselves merely became petaloid. This was the case in the Epigæa recently found by Dr. Darrach.—*The Garden.*

FORCING ASPARAGUS.—Whenever the forcing of Asparagus is an object, a supply may be cheaply and readily obtained for the table, for at least six months of the year. With the view of making a fresh plantation every third or fourth year, according to the quantity required, a small stock of seedling plants should be kept ready for use when needed. In the seed-bed I prefer sowing rather thinly, on a light, well-prepared bed of fine earth, which will yield plants fit for transplanting the first year after sowing; but after two years this would be better still. A plantation, such as I have described, being formed every fourth year, a portion of the preceding one may be lifted for forcing every year, after the second comes into bearing; and so keep on with a regular rotation of sowing, planting, and forcing, upon a comparatively small surface of ground, which will be much improved by the alternate cropping and moving. Various methods of forcing are in practice. Perhaps no more simple or successful one is followed than that of placing the roots in the border of any early Vinery or Peach-house "at work;" where, by being placed closely together, the spaces between the roots filled up with fine mould, and covered about two inches over the crowns, the produce will we rapid and regular, in proportion as the house may be slowly or quickly forced. A succession may be kept up in this way where there exists several such forcing-houses, as it is only in the early stage of the forcing of such houses that Asparagus will succeed best when grown in them. In a similar way a good succession of Asparagus may be kept up from an exhausted tan-pit in which Pines have been grown the preceding season. Next to the above method, where houses do not exist, or where it may not be convenient so to occupy them, old Melon-frames answer equally as well, worked by fresh linings of fermented dung, the old bed being well perforated below, to permit the heat to pass more regularly into it from the linings. Two or three light frames worked alternately in this way, observing to fill one as the other is fit for cutting, will afford a regular supply for any middling-sized family about every second or third day. Asparagus will also do well on newly made-up beds; but great care must be taken to have the materials well fermented, and the bed properly sweetened previous to planting, else the roots may be seriously injured, if not quite destroyed, as no plant is more impatient of overheat than Asparagus; on this account I would prefer forcing this vegetable in exhausted beds or pits, as the case might be. The more closely the surface of any bed can be packed with roots, the greater the produce will consequently be, provided that sufficient space is left for a little package of fine mould amongst them, which operation must be carefully done, finishing the whole by a covering over the crowns about 2 inches thick, and settling the whole in a day or so after, with a good watering, when the bed may be shut close up, until the heat begins to rise, and the heads make their appearance, when, for the sake of strengthening and giving them color, a little air may be admitted, more or less, according to the state of the weather and the heat of the bed; as a simple criterion, the guard, or watch-stick, should never feel much beyond blood-heat. Of late years Asparagus has been forced to some extent in permanent beds, formed by side walls of brick-work, the sides and ends being pigeon-holed; between which walls fermented dung is put, and the beds on either side are forced. This method answers very well where a large command of materials and labor can be had; but upon the whole, I would greatly prefer the simple method of forcing just particularized, namely, an old Melon-bed, or inexhausted Pine pits.—J. C. NIVEN, in *Gardener's Mayazine.*

FLORAL DECORATIONS IN BALL ROOMS.—These evidences of social refinement are certainly on the increase, and under the direction of our best decorators, are now brought to a high degree of perfection. Bridgewater House the other night, and also the conservatory and arcades of the Royal Horticultural Society at South Kensington, as arranged by Mr. Wills, on the occasion of the Prince and Princess of Wales' visit, were marvels of floral beauty. When it is remembered that our largest decorat-

ing firms use from 20,000 to 30,000 decorative plants every week during the London season, we can form some idea of the extent to which plant decoration is now carried. One novel feature in modern decorations is the introduction of huge blocks of ice, which, either in the shape of a simple obelisk 3 or 4 feet high, or in imitation of massive rock work, have a unique effect when fringed with Ferns, and draped with the slender-growing sprays of different kinds of trailing plants. On every hand are found pleasing groups of rare exotics. judiciously arranged as regards picturesque effect. Here is a bank of fresh Selaginella, forming a carpet, from which little groups of the Umbrella Sedge spring like miniature Palms; while here and there may be seen more massive succulent plants in association with fairy-like Grasses and Maiden-hair Ferns that tremble with the softest breath of air. Here, too, are masses of Palms and tree Ferns that spread their bright green feathery fronds over priceless groups of antique sculpture, while soft masses of harmonious colors nestle here and there on cool green banks of Ferns and Mosses. Handsome mirrors, half concealed by tasteful fringes of trailing plants, increase the effect by apparently augmenting the space. At Bridgewater House glowing crimson masses of Spiræa palmata, admirably set off with fresh green leaves, were highly effective beneath the subdued gaslight; while slender Palms sprang from the cool beds of Club Mosses, on which delicately perfumed sprays of pearly-white Stephanotis and Water Lilies rested in rich profusion. Here climbers drooped from every bracket and ledge, graceful in form and soft in color. Bouquets of choice exotics were here and there suspended beneath the crystal brackets and chandeliers—in short, every lobby, hall, and corridor was tastefully furnished with foliage plants and flowers. Stately groups of Dracænas, and noble foliaged Palms harmonized well with the massive cool, grey marble shafts and columns that support the corridors and galleries overlooking the saloon. The saloon itself was likewise tastefully fringed with banks of choice Palms, Ferns, and flowering plants. At South Kensington the decorations, though essentially similar in many respects to those just noticed, were carried out on a much larger scale. The Rockery in the conservatory, formed of several tons of the finest ice, was a novel feature, and the centre of attraction during the evening. It was tastefully ornamented with choice Ferns, Grasses, and succulent plants, and fringed at the base with Maiden-hair Ferns, Lomarias, Pteris serrulata, and Isolepis gracillis, on a deep crimson ground. The western arcade was tastefully bordered with Palms, Tree Ferns, and choice flowering plants and the introduction of cool obelisks of ice at intervals, considerably heightened the effect. Not the least interesting features of the evening were the magnificent bouquets presented to the Princess of Wales and the Czarevna. These were remarkable for elegant simplicity, being composed of but a few of the choicest flowers, among which were softly-tinted Tea Roses, pure white Gardenias, half hidden among the most elegant drapery of fresh green Maiden-hair Fern, sprays of pearly Stephanotis and Tuberoses, the whole forming a charming collection of sweet-scented flowers.—F. W. B., in *Garden*.

EVERLASTING FLOWERS.—The immortelle of the east (Helichrysum orientale), a native of Asia, has been known in Europe since 1629, but was only first cultivated in gardens about 1815. Its flowers, the symbols of friendship, or tribute to talent and genius, serve to make the garlands of immortelles which ornament the the tombs of the dead in Roman Catholic countries. It is cultivated in France, in the communes of Lower Provence, where the soil slopes towards the Mediterranean. It succeeds very well on the slopes of Bandols and Cioto, which are exposed to the south and enclosed by walls of stone. It blossoms about the month of June. It suffers from heavy and continuous rains and strong dews, and only vegetates well on light, stony, and permeable soils. It is propagated by offsets, which are separated from the old stocks. The gathering of the flowers is made in the first days of June, before the bursting of the buds. As the flowers which are insufficiently formed or too full blown are rejected by the trade, it is important not to cut either too soon or too late. The collection is made by women, who tie them in small bundles, which are ordinarily dried on the walls of the enclosure. Finally, young girls are employed to remove the down which covers the ramifications. A kilogramme (2½ lbs.) by weight of those plants contains about 400 stems, each containing about 20 flowers. Each growing tuft of immortelles produces 60 or 70 stems. A hectare (2½ acres) will contain 40,000 tufts, producing annually 2,400,000 to 2,800,000 stems, yielding 16,000 to 20,000 bundles, or 5½ to 6½ tons in weight, of immortelles.—*Gustave Henge.*

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HINTS FOR JUNE.

FLOWER GARDEN AND PLEASURE GROUND.

Towards the end of June propagation by budding commences. This is very commonly employed with the rose; but ornamental trees and shrubs may be increased in the same way. Closely allied species must be chosen to work together.

In regard to the rose, experiments are badly needed, in order to discover a good stock. In England the common dog rose is the most popular. They have tried the one we discard—the Manetti—and it seems to please them. It suckers too much in our country. Probably the Prairie Roses would be better for us.

We used to say of June to cut off roses as they fade, in order to get them to flower again more freely; but as we write this in early May, with ice the eight of an inch thick before us, it seems odd to talk about June roses. They may, however, make up for lost time.

Bulbous roots, when done flowering, and the leaves have faded, should be taken up and dried, mixed with chaff, or other light loose material, placed in paper bags, and stowed away in a dry place till fall.

Dahlias should not flower early. Keep them growing till fall, when they will flower finely.

Propagation by layering may be performed any time when strong vigorous growing shoots can be had. Any plant can be propagated by layers. Many can be readily propagated no other way. Cut a notch on the upper side of the shoot, not below, as all the books recommend, and bend down into, and cover with rich soil. In a few weeks they root, and can be removed from their parents. Stakes for plants should be charred at the ends before using, when they will last for years.

Flower-beds should be hoed and raked as soon as the ground dries after a rain. Loose surface soil prevents the under stratum drying out. Peg down bedding plants where practicable. Split twigs make the best pegs. In dry whether do not water flower-beds often; but do it thoroughly when it is done. See that the water does not run off, but into and through the soil.

Evergreen hedges will require attention as they grow. Where the height desired has been attained, the top and strong growth should be cut back while they are still watery. The side shoots need not be touched till past midsummer. All wise people now employ the conical shape for hedges. In cutting back the top growth at this season, the conical form can still be preserved.

Care for the walks on the grounds. It will excuse many neglects of other things. Then care for the grass,—frequent rolling and mowing benefits the lawn amazingly; so does slight dressings of salt, wood-ashes or guano. Weeding of lawns is seldom thought of; but if neglected some weed or another will be very liable to grow out of the grass.

The soil in the flower-beds should never be allowed to remain hard, as it will sometimes get after heavy rains. Hoe as soon as it dries, and then pulverize finely with a rake: loose powdered soil will not dry like compact clods.

Trees planted last spring will be benefited by going over with a rammer and pounding the soil firm about the trees when dry. It is often much

better than a watering. Sometimes trees do not push their new buds freely after transplanting, through root injuries. Pruning always helps them in such cases.

The Rose bugs are apt to be very annoying at some seasons. The best remedy is to shake them off into a pail of water. The rose slug is often very injurious to leaves—completely skeletonizing them. All kinds of rapid remedies have been proposed—whale oil soap, petroleum, &c., but the best thing of all is to set a boy to crush them by finger and thumb. It is astonishing how rapidly they are destroyed by this process. This is true of most of the larger insects. Hand picking or crushing is by far the best remedy.

In nothing has progress in gardening been better indicated than in the use of the pruning knife on evergreens. Up to the existence of the *Gardener's Monthly*, one might prune any trees *except* evergreens. Few articles ever took the public more by surprise, than our first paper showing that pruning benefited these plants. Now it is generally practised, and it is believed to be followed with more striking results than when used on deciduous trees. In transplanting evergreens of all kinds from the woods, the best way to save their lives is, to cut them half back with a hedge shears; and when any come from the nurseries with bad roots, or roots which have accidentally got dry, a severe cutting back will save them. And then if we have an unsightly evergreen,—a one-sided, or sparsely clothed evergreen, if it is cut back considerably it will push out again green all over, and make a nice tree. It must be carefully remembered, however, that in all these cases the *leading shoot* must be cut away also, or the side branches will not come out well. An idea prevails that a new leading shoot will not come out on the pine family after one has lost its first. But this is a mistake; sometimes they will not show a disposition to do so, side shoots near the the leader's place will seem to put in a rival claim for the leadership of the following year, but if these are then cut away they will not make a second attempt, and the real leader will then push on into its path of destiny.

The Scotch Pine and the Chinese Arborvitæ, are two plants which derive wonderful benefit from the pruning knife. Both these are very liable to get ragged when left entirely to their natural inclination, but grow with a beautiful compact luxuriance under the occasional application of the knife. Indeed the Scotch Pine with judicious pruning makes one of the most beautiful ornaments of the lawn and pleasure ground. It can be made to take many odd forms, one of the most picturesque is obtained by cutting off its head when about ten feet high, and never let another leader grow. The side branches are all cut away except the upper tier; these spread, then, outwardly—not exactly creeping—but flowing forward in the most luxurious green imaginable, making a much prettier arbor than any weeping tree we ever saw.

These peculiar objects are very striking in a flower garden, and other things beside evergreens will furnish them. Deciduous shrubs may often be trained into interesting forms. The Wisteria sinensis, for instance, makes a very interesting object, trained as a small tree. If tied up to a stake for one or two years, and then suffered to stand alone, it will make a pretty round head, and when in spring the pendent blossoms are in profusion, it makes the unique ornament on a lawn.

For most plants cow manure, well decayed, is among the best of fertilizers. It seems to have the power of keeping moist longer than most other manures, and of course no fertilizer is of value, only as a plant by moisture is enabled to take in the fertilizing particles into its system.

Summer bulbs like Tigridias, Tuberoses and Gladiolus, have mostly been planted by this time, but many, to have flowers late, keep them till June before planting.

FRUIT GARDEN.

Watch newly planted fruit trees. If they have but a few weak leaves only, it shows the roots have been injured; then prune them severely, which will make them grow freely. It should be a main object to make all transplanted trees not merely have leaves, but have new shoots at the earliest possible moment. If they are growing very well, they may be allowed to perfect a few fruits. Overbearing on a newly planted tree is, however, one of the best ways of making it stunted for years.

The evil effects of severe summer pruning on fruit trees are also now clearly recognized. All pruning, winter or summer, is an injury to vitality. Frequently the injury is so slight that the tree soon recovers, and some other advantage being gained, pruning on the whole may be a benefit. It is well, however, to always keep in view the principle that pruning always weakens,

in order to do as little of it as possible, consistently with what we wish to accomplish. At this season we may do some good in saving the necessity for winter pruning, by pinching out shoots we may not want, while they are in a young and immature state.

Grapes first coming into bearing should not be permitted to perfect large crops of fruit while young. It is excusable to fruit a bunch or so on a young vine, "just to test the kind," but no more should be permitted till the vine has age and strength. Vigorous growth, and great productiveness are the antipodes of the vegetable world. Encourage as much foliage as possible on the vines, and aim to have as strong shoots at the base as at the top of the cane; this can be done by pinching out the points of the strong shoots after they have made a growth of five or six leaves. This will make the weak ones grow stronger. Young vines grow much faster over a twiggy branch, stuck in for support, than over a straight stick as a trellis, and generally do better every way. Where extra fine bunches of grapes is desired, pinch back the shoot bearing it to about four or five leaves above the bunch. This should not be done indiscriminately with all the bunches. Too much pinching and stopping injures the production of good wood for next season. These hints are for amateurs, who have a few vines or trellises; for large vineyard culture, though the same principles hold good as far as they go, they will vary in their application.

Strawberries, when grown in hills,—the most laborious but most productive method of growing them—should have runners cut off as they grow, and the surface soil kept loose by shallow hoeings occasionally. Short litter, half rotten as a mulch, is also beneficial. Lawn mowings are often applied, but with little benefit. Where they are grown in beds, they should not be too thick, as they starve one another, and the crop next year will be poor.

Those who want to make new plantations from those on their own grounds, will find it best to layer runners into pots, sunk in the earth near the roots for the purpose. They thus get very strong plants, which transplant in September, and make beds which will bear abundantly the next season.

Blackberries are not always ripe when they are black. Leave them on till they part readily from their stalks.

Currants are so easily grown as to require few hints for their management. If they throw up many suckers, take out a portion now, instead of waiting till winter to cut them away. The Currant borer is a great pest, eating out the pith of the young shoots, and causing them to grow poorly, and bear but small fruit next year. Gummy "fly-paper" is, we think, the best thing to catch them.

Gooseberries should have the soil, and even the plants, if it were practicable, shaded a little.

Dry air about them is one great cause of mildew.

VEGETABLE GARDEN.

At the end of June, some Celery may be set out for early crops, though for the main crop a month later will be quite time enough. It was once customary to plant in trenches dug six or more inches below the surface; but the poverty of the soil usually at this depth more than decreases the balance of good points in its favor. Some of our best growers now plant entirely on the surface, and depend on drawing up the soil, or the employment of boards or other artificial methods of blanching.

Beans produce enormous crops in deeply trenched soils, and are improved as much as any crop by surface manuring. We hope this method of fertilizing the soil will be extensively adopted for garden crops this season. Those who have not yet tried it will be surprised at the economy and beneficial results of the practice.

Cucumbers for pickling may be sown this month, and Endive for fall Salad set out. Parsley for winter use may be sown now, in boxes of rich soil, and set in a cool, shady place till it germinates.

Asparagus beds should not be cut off after the stalks seem to come up weak, or they will be but a poor crop the next season, and the beds will "run out" in a few years.

Tomatoes, after trying all kinds of trellises recommended, will be found to do best on stakes tied up singly. It is best to plant a strong pole, as for Lima Beans, with the plants when first set out, and tied up as they grow. Marketmen generally let them grow as they will, on the ground, which, perhaps, although not yielding as much, cost less labor, and may thus be most profitable.

The Swede Turnip or Ruta Baga should be sown about the end of the month. A well enriched piece of ground is essential, as by growing fast they get ahead of the ravages of the fly.

Manures abounding in the phosphates—bone-dust, for instance—are superior for the Turnip.

Sweet Potatoes must be watched, that the vines do not root in the ground as they run, which will weaken the main crop of roots. They should be gone over about once a month, and with a rake or pole, the vines disturbed somewhat from their position.

Cabbages and Brocoli may still be set out for fall crops, also requiring an abundance of manure to insure much success. Lettuce, where salads are in much request, may yet be sown. The Curled Indian is a favorite summer kind; but the varieties of Cos, or Plain-leaved kinds, are good. They take more trouble, having to be tied up to blanch well. Many should not be sown at a time, as they soon run to seed in hot weather.

Peas for a fall crop may be sown. It is, however, useless to try them unless in a deeply trenched soil, and one that is comparatively cool in the hottest weather overhead, or they will certainly mildew and prove worthless. In England, where the atmosphere is so much more humid than ours, they nevertheless have great difficulty in getting fall pears to go through free from mildew; and to obviate these drying and mildew-producing influences, they often plant them in deep trenches, made as for Celery, and are then much more successful with them.

COMMUNICATIONS.

PLANTING "FOREIGN" TREES.

BY J. J. S.

MR. EDITOR,—In a communication in your April number, a writer alludes to a "lecturer," and takes him a little to task for recommending planters to employ "foreign trees." If he alludes to a paper read by me before the Germantown Horticultural Society, reported by you, I would beg a little indulgence to say that he has not quite understood the remarks I made; and permit me to eschew the title of "lecturer," to which I have no claim.

In using the words "foreign trees," I remarked that I used the word "foreign" in relation to trees of the immediate neighborhood intended to be improved, and added, to make myself understood, something like this: that if an improver, whose place is surrounded by Jersey pines, was to plant in his enclosure *only* Jersey pines, the effect on entering the said premises would be the feeling of monotony, and a total absence of the sentiment of "expression." There can be *no doubt* about this among cultivated horticulturists. He might as well say that the Marquis of Bredalbane would do quite as well to introduce on his lakes the duck of his country, instead of the graceful swan.

What we want in planting is to convey the idea of care, and expense, if you please. We like to feel that somebody has seen the wants of the mind, and has traveled and collected the treasury of earth, so lavishly supplied by the Creator, and brought them *at great cost* of time and talent to be enjoyed by the civilized man. Our writer would utterly ignore the labors of the explorers of the formerly unknown regions of the earth, and confine his admiration to our native cedars! Where would Douglass be, and the men who have explored Africa, China and Japan to make Backhouse's fernery, &c.

The idea is a pleasant, and perhaps a popular one, to use the domestic adornments of most of our country life, as we see it on the farms of those who are satisfied with what they know and have. But, depend upon it, there is a higher civilization existing than is satisfied with the tavern potraits of the landlord, painted by traveling so-called artists. There still exist a number of people, and may these increase in number, who will pay thousands for a picture painted by Raphael, and who would not have the landlord's portrait for a fire board. Let us aim at *the highest civilization*, as well as the true religion. If we are satisfied with the usual court yard, and the cedars that grow spontaneously along our fences, depend upon it we shall be contented with the second rate in politics and in art, and never *understand* the best of books, and cannot admire the efforts of Shakspeare. Be content, oh! anti-lecturer, with your cedars; love your home and your children, but do not let them know that there is better music than they hear at their isolated dwelling. Give them Jewsharp, and deny there is an organ or piano. Do not tell them of the wonders of creation. Let science be ignored, and sit under your cedars, not knowing there are Lebanon growths and Magnolias. Eat of the native vine, and be sure never to speak of the Black Hamburg or the Chasselas. We envy your condition; it is that of the self, who denounces the gift of reading, and is satisfied with his *Weakly* Gazette and his poor tobacco pipe. Let him rejoice in his happiness, for he will die and nobody will be the wiser for his thoughts.

AMERICAN HOMES.

BY GENERAL W. H. NOBLE, BRIDGEPORT, CONN.

At Edgewood, near New Haven, Donald G. Mitchell, author and artist, has fashioned a hundred or more acres of rough and untutored outlying New England lands, into picturesque landscape and a lovely rural home. All the well appointments and belongings of such property, were there in rich abundant naturalness. Here were old woods, full of gnarled and tumbled down trees, and of dense tangled undergrowth. A domain of swamps and water-logged brook-banks and lowlands, rills, rocks, and cedar thickets, a surface and area full of footmarks and garb of nature, in such outcast places. It came to his hands as uncouth and worrisome a problem of shapely landscape as could have been desired. To its mould and furniture of naturalness Mr. Mitchell gave graceful aspect and approach. The selection of the property, and his work thereon, prove that such improvements can be made, without the toil and cost which so often deters the thrifty man from their trial. The same features which he has made so attractive are plentifully supplied. Nature's mould and attire in such rude places furnish the fittest aspect and vesture for landscape adornment. The trees, shrubs and flowers, native to such domain, are good enough, and ample for its decoration; at any rate their like, closely in surfeit, are equal to all the needs of graceful rural work.

Edgewood charms every visitor by its chaste simplicity and loveliness. This result is due—not to any exceptional merits of the property—but to the deft and thrifty use of opportunities, rife in every neighborhood. It is not the material or the tinge which makes this rural picture so charming, but the combination by a master hand of tints and shades, and shapes, into comeliness and expression. Every trait of naturalness is given its clean cut character and aspect. Not alone those things which have an attractiveness of their own, are moulded into this rural mosaic, but homely and repulsive are made into attractive features of the landscape.

Thus the swamp and the water-logged lowland, many times, and to many persons, so unseemly, instead of being hidden and screened, are here made a feature piquant and full of interest. Walks and drives overlook their plateau of rank vegetation, and sweep along open bog-tufted areas and borders, decked and girdled with all those blooms and growths which love such dark and miry footings. Beside the oozy banks and edges are massed the flaming cardinals and water-loving lilies. Clambering grapes and the Clematis wreath and drape,—Azaleas, the yellow blooming spice bush, the red berried black alders and their comely kindred shrubs. The wild swamp rose crowds and wedges its gay summer bloom and its autumn ruby seed plumes into the dense and more robust thicket. Low growing maples lift above the dwarfer growths their spring-time scarlet blooms, and their rich leaf-tints, autumn's tribute to the waning year. Along the trunks and fronds of dwarfish trees, on little mounds and promontories, rescued from the monotonous water-bed, the hairy footed mercury festoons its crimson on frost tinged drapery. Here too throng the feathered songsters of the vale, to breed and feed and roost, making the woodland vocal with their sylvan joys. Thus with a courageous task, a master of simplicity has fashioned so rude a rural feature as the swamp, into comeliness and grace.

By like clean cut limning, has Mr. Mitchell presented each varied feature of surface and growth. But no borrowed leaf or bloom has place in his improvements. No tree, shrub, or flower, gives virtue to his property, not native to its area. Every class thereof of New England birth, had its preemption in his woodland. In the thicket and the openings rose many robust and stalwart specimens of the best. But no tree on the property so satisfies the eye, and fits such varied purposes, in every aspect and position, as the Red Cedar. Its rich and changeful verdure and versatile expression and style, give character to the property.

This evergreen, here and everywhere so despised and neglected for the foreigner, or natives not half so good, yet, wherever used with wise and courageous taste, vindicates its fitness for all the duties of its class. Massed in wild places,

grouped above ledges and on bleak hill sides, or in open ground, and bordering walks and drives —here sheltering the wild flowers of the wood, or screening tender things against wintry blasts; there heaving up against its dark fronds some vine, wreathed in gentle tints of leaf and flower; now mantled with the bright tinge and azure bloom of the Wistaria or the Clematis; or in some way side group, necklaced by the Bittersweets, meets tender verdure with coral berries—strung in every age, position, and stature, this neglected evergreen seems gifted for all aspects and expressions of our landscape. In dells and glens, and crowning lonely rocks, it looks weird and sombre. In the open ground sun-light, whatever its shape or stature, comeliness attends. No shelter is more dense and protecting. No home for birds to feed and breed and joy, is more welcome.

All the evergreens are admirable. Next among natives the Hemlock, in its earlier years so graceful, feathery and brilliant, deserves a place. But for one at home, everywhere, and holding its character at all ages, give me for New England and the north the Red Cedar, so marked a feature in its sombre dells, and on its rock-ribbed barren hills.

At Edgewood they "possessed the land" in their glory. Mr. Mitchell ably enlisted them, and proved their capability for his service. Throughout his ground their changeful forms and verdure fulfill all the duties of their race.

This sketch but faintly renders the simple grace of a rural work, which, when seen, lingers as a joyous memory. Nature's garb and mould had not gifted it beyond, like spots which throng this sound girt shore. Mr. Mitchell's deft and thrifty handling would show its equal in every township between New York and Rhode Island. A picturesque mould of earth and woodland attire is not the exception, but rather the rule with us. Such opportunities, and the taste for country life, inspires the hope that like graceful homes will multiply among us.

The lesson of the three happy rural efforts which I have sketched, is, that neither much money nor heavy work, or rare situations, are needed for the making of simple and refined republican homes. Republican simplicity accords with that of nature. Neither harmonizes with princely ground and dwelling. Few of us are sheltered by the roof of our fathers. The stranger's child sits at their fire-sides. Such is our social drift, and such the life to which we should shape our living.

Let our States and nation, and large municipalities build and adorn nature with a largeness fit to their means and their life of centuries. For their work, I predict a refinement and boldness such as the world has never seen. A taste, therefore, daily gathers breadth and strength and culture. It began its work in cemeteries and public grounds. It now grasps the grand conceptions of the Adirondack, the Yo Semite and the Yellow Stone as National Parks.

Let the citizens leave to the great public all ambitious efforts in architecture and park domain. Chaste home adornment should limit our individual work. Whatever we do should so leave our estate, that there may be thereto, some "lineal heir of ours succeeding."

COLD GRAPERY NOTES.

BY JASPER STANDSTILL, BROOKLINE, MASS.

The winter of 1868 was fatal to a number of cold graperies in this section; the one I have charge of was amongst the number. Out of forty vines three escaped, four were killed outright; all the others from about two feet from the ground were split by frost. In due time all started but one (a Black Hamburgh) from the bottom; this stump was left, with the hope it would eventually break, but no. In May, '69, a slight incision was made, and sap flowed freely. I had, on hand, a young vine in pot (Mrs. Pinces' Muscat). When the wood was in condition I inarched it to this stump, and was soon assured it was sucking like a weasel. Being assured of safety for the scion, I severed the connection, and then planted the parent plant in a vacancy within eight feet of it. The growth of both has been all that could be desired, that of of the parent plant especially robust. In 1872 I allowed these bunches to ripen on the inarched vine. In 1873, six bunches, three of which were shown at the Annual Exhibition of the Massachusetts Horticultural Society, and were awarded the "Society's silver medal," Of the parent plant eight feet of strong, well-ripened wood was reserved, yet, although every eye started even and strong, there was no sign, nor has there been, of fruitfulness whatever.

In the *Gardener's Chronicle* of the past year much discussion has gone on from time to time about certain grapes as being worthless; others

again asserting they have derived the happiest results by grafting on certain stocks.

I am pleased with my result, and very soon intend to graft over the Mrs. Pinces' Muscat with Black Hamburgh, feeling assured the union will be a happy one, as I now know that alone, it is an unpleasant failure. As to its keeping qualities, it will fulfill the most extravagant wish. As to its flavor, it is not that of the Muscat of Alexandra.

RAMBLING NOTES.

BY ISAAC HICKS, OLD WESTBURG, L. I.

PLANTING TREES.

I remember in the days of youth seeing an old friend—a neighbor—planting apple trees. He had his man to throw the earth in slowly, and with his cane carefully punched and packed the earth around and under the roots. And his trees lived and grew nicely. Some forty years have winged their way, and I am now more confirmed the old friend had the true art of planting trees. Some recommend shaking a tree up and down. And last spring, passing by where a number of nice Siberian Arborvitæ were planted, I perceived they were looking wilted, and, on examination, found the person who had planted them, believing in the churning theory, had, by this process, cramped the flexible roots in a bunch together, leaving a hollow space directly under the tree, and the roots drying, the leaves wilted, and of course they died. Had they been planted with the roots spread out as they grew, and, as the earth was slowly put in, a cane or a fork-handle to pack the earth close under and over the roots, as the earth covered them, doubtless few or none would have died, although a very dry season.

We planted, last spring, on the lawn, a row of large hemlocks about 6 feet high, and also a row of Siberian Arborvitæ, and pounded the dirt faithfully as the hole was filled, and they lived admirably. Some take much pains to bring water at a sacrifice of time and labor; but we believe if the earth is freshly dug, as it should be, pounding the earth in properly is as good or better.

TRIMMING ORCHARDS.

It is said that a great physician remarked that when he commenced practice he had twenty remedies to every disease; now in advanced age he knew of twenty diseases for which there was no cure. So it is in the theory of trimming trees. In youth we read the many excellent treatises on fruit culture, and in them we find the law of training vines and fruit trees laid down with mathematical precision. It is apparently as easy to regulate the growth of an apple orchard as for an architect to build a house. But when we try it we find the trees and vines, bushes and plants, will have a way of their own, and limbs will die where we want them most to grow They will be crooked and grow rampant at times, and if we doctor them too much, or force nature, they will not grow or bear as we know according to the rules they should do.

Some thirty years ago I planted an orchard of apples trees; and it was my pride. I loved to watch its growth; and, having a weakness for new varieties, I had growing over one hundred different kinds. How many pleasant hours I have spent in inspecting the trees, debating with myself whether this limb should be cut off, if the head was too thick, or was it just right. And when the apples made their appearance the speculations indulged in if the crop would be a good one; and when the ripening time came, how closely was the new kind inspected and tasted. Ah, yes, my friend, I hear the query how about so many kinds in an orchard. It is simply a pursuit of knowledge under difficulties. The knowedge gained of so many varieties is highly gratifying and useful, but when the gathering time comes so many sorts are a bother and unprofitable. The object in trimming the trees was to have them to head low, and the lower limbs reach the ground. In about fifteen years I had to stop tillage, for it became almost impossible to plow the orchard. After that I allowed the grass to grow and rot on the ground, but the trees soon showed that in dry weather the grass extracted the moisture so much that the trees suffered, and the lower limbs died sadly. Now I pasture with sheep, and spread all my coarse manure from the barn yard on the ground I can afford—say once in three years it is all manured. But the different varieties will have their own habits. Some grow strong and upright, never condescending to touch the ground; others bend down and will not rear their heads aloft. Now how shall we treat such wayward trees? Just the same as the old physician, act out your own judgment; and we will have to let nature do a large part of the work. Some of the prettiest symmetrical trees—models of beauty once—have suffered the loss of so many of the lower limbs that they are now quite high from he ground

and the arms of present growth are out of reach of my long handled saw.

Taste is good, and a great help in horticulture, but judgment is better; and we must get that judgment by experience and observation in medicine and horticulture. But there is pleasure to the pomologist in testing new varieties of fruits. There is always a commendable object in finding something better. We hope to find an improved variety the best of its season; and although in our enthusiasm we may sometimes err in judgment, but when we look back to the fruits of fifty years, have we not something to be proud of in the great progress we have made? Instead of digging up the wild strawberries, and planting them in the garden, with the hope of realizing a few berries, or purchasing the barren Hautbois, the feeble Keens seedling, as I once did, now we rejoice in the Chas. Downing and Seth Boyden. How well I remember in those youthful days, looking with wistful eyes at a neighbor's little patch of Old Hudson, sacredly kept for the invalid, and the only one who wasted the ground, as it was thought in our place, in such useless things.

When I built my house, and wanted a few shrubs in those days, I had to take up with the lilacs syringe as we call it, a snowball, and a few others of the common kind. Now we can select from a hundred varieties.

Last spring I queried with friend Meehan about the best way of growing young Norway maple in the nursery, and I find that our horticultural friend did very much as we all must do, as our best judgment dictates. I knew that many kinds of shade trees in the nursery were much improved by cutting the young trees to the ground when one year planted. It is generally admitted that the Norway Maple is the best shade tree in this part of our country, and the most difficult of nearly all to make grow in our light soil when young. I find that there is such a difference in them that it is best to allow all thrifty and straight trees of this variety to grow on without cutting off, and the Sycamore the same. I would like to know if the Oregon Maple, Acer macrophylla, is hardy in our latitude. Last month my attention was called to two beautiful and perfect specimens of the Overcup Oak. The bark ridged almost equal to the sweet gum; and I am surprised that such ornamental trees as these are not more frequent. They grew near the banks of the Delaware, above Trenton; and the gentleman said he planted the acorn about twenty years ago. They were nearly thirty feet in height,—very thrifty and symmetrical.

PERENNIAL FLOWERS AND BULBS.

I am surprised to find so many careful money-saving lovers of flowers ignore the beauty and the cheapness of perennial flowers. We can have them throughout the blooming season, from early spring to late in the fall, with but little care or expense, and certainly they compare favorably with the bedding plants that are purchased and thrown away every year. There are many new varieties greatly improved over the older sorts, and they can generally, by division, be multiplied in number, and continued for many years. I certainly would like a few bedding plants intermixed with the perennials, and could not spare the sweet looks of the lovely Verbena, the dazzling Salvia Gordoni, and the many-hued Coleus, or a Pelargonium in its stately show; but we have always clung to our old friends, the perennials, with deep affection. The annuals also desire attention, but they are often too much trouble; and I expect they come up best and grow most satisfactory when tended by the kindly gentle care of our lady friends. Our seedsmen tell us very kindly how they should be planted and transplanted, what the soil and culture, but I must leave them to those of more patience and nicety of attention than myself. But whatever our inclinations may be, let us have flowers to refresh when weary, and cheer us in life's journey.

RECOLLECTIONS OF SCENES AROUND THE UPPER LODDON, AUSTRALIA.

BY W. T. HARDING, AGRICULTURAL COLLEGE, COLUMBUS, OHIO.

Far away among the mountain ranges, between Tarnagalla and the Upper Loddon, where the miner's pick had not destroyed the landscape's sylvan beauty, or marred the face of nature with unromantic holes, and heaps of earth and stones, peculiar to the diggings, the primitive beauty of that delightful region was unchanged. Both forest and field retained all their original attractions. No fell destroyer had been there; no ruthless hand had left its mark; neither had the footfall of the vandal been heard. Happily there are influences in nature, which take a firm hold of the heart and soul of her children, and never leave them. Theirs are the pure delights her presence brings to those whose love she claims. We almost doubt if any civilized being could remain insensible to her charms. The talismanic power of living beauty one might suppose, like music, would charm either savage or brute. Cold indeed must be the bosom, and still more frigid the heart within, that manifests no symptoms of love or sympathy for the many emblems of God's good will to man. They are tokens of His regard.

The emerald film of confervoid life, floating on its water bed; the gray lichen, which clings to the bare scarp of the rocky cliff, with its clammy congener the liverwort, vegetating in dark forests, where the cascade splashes in cool caves and old grottoes; the tiny green silky threads of moss life, which softly carpet the dingle, beneath the feathery fronds of beautiful ferns, whether overshadowed by the "ancestral oaks of England," "the big trees," or Sequoias of California, the monster gum trees, or Eucalyptus of Australia, are all types of nature's God.

We are camping again in the bush, in the wild territory of the Upper Loddon, where "the woods and groves in solemn grandeur rise." Night has scarcely left the morning. As yet, there are no distinct shadows, though all seems shadowy. Anon, the faint outlines of the forest are dimly seen, as the murky vale becomes less opaque, and seems to fade with the glimmer of morning light. As we look up, and along the umbrageous arches of the arboreal temples, the summits of their lofty fanes seem to "pierce the empyrian blue." Living monuments they stand, towering higher than any superstructure reared by "the children of men" since the days when "Shem was one hundred years old."

Looking through the fretted leaf screens, and to the bough groined roof, we perceive the first beams of the morning softly look down. The garish light reveals the massive forms of the tree pillars more gigantic than the granite monoliths of ancient Luxor, and may be as old as its ruined masonry. Solemn in their calm majesty, sombre in their ponderous solidity, hoary with accumulative years, these monarchs of the forest stand fast and firm, bidding defiance to both tempest and flood, as well as the great leveler "Old Time."

Robust in age, of majestic port and noble presence, a halo of veneration seems to linger around them like the ruined piles of Greece and Rome. The impressiveness of such scenes seem to fill the heart with seriousness and solemnity, and invest the spot with that sadness and reverence we often feel when musing among "the mouldering dust that years have made" in the castle walls, the abbey's cloisters, or cathedral aisles, where slumbers the illustrious dead. Setting aside all speculative theisms of the past, with their ancient legendary associations, who has not felt that they were within "His sanctuary" when in "the sacred groves?" In the depths of the forest, how profound and sublime are the feelings when meditating without the glamour of sculptural art, or the deft carvings of the master hand of the cunning artist, to remind us we are on consecrated ground.

Pardon me, Mr. Editor, if I have written a homily, as I did not mean it when I began. My intentions were simply to describe the scene, and my impressions, as they occurred when the morning broke and revealed a picturesque sunny slope, checkered with myriads of many colored flowers, so delightful, so beautiful were they. Often in many a fair sequestered spot, in many a forest glade, we have watched the shades of night, pale, soften and fade in the morning's gray, as "Aurora" gently opened the cloud curtains, flushed with royal purple and flecked with crimson and gold, "when Phœbus first appears." How pleasant is the still morning hour when nature awakes from her slumbers, infused with love and harmony, to watch the opening petals drink the dew from their flower cups. What a treasure of pearls and wealth of diamonds are theirs—glinting and glistening like the rarest of jewels, emitting iridescent flashes as the sun peeps through the orient casement to gild the opening flowers.

Happily we strolled among "the flowers of the forest," and found them all smiling, as we wandered along the leafy arcades and unbrageous aisles, to examine the immense arboreal columns, so firmly fixed in the soil, the circumference of whose broad bases measured in several instances from fifty to seventy feet, and supported foliated capitals almost five hundred feet above. How amazing their magnitude appears, and how insignificant would seem if placed side by side,—the finest specimen of "the brave old oak" with the colossal Eucalyptus. Well may they be classed among the marvels of the vegetable kingdom, or "wonders of the world."

The intelligent readers of the *Monthly* (and there are thousands of such happy mortals) will recollect the frequent allusions made to the great Eucalyptus trees of Australia, which have occurred from 1870 until now. It could not well be otherwise. Like the mighty Sequoias of Cali-

fornia, a great and peculiar interest attaches to them.

In the locality we are exploring, the forest undergrowth is well covered with multitudes of pretty free flowering shrubs. Among the many attractions, will name a few, such as Pulteneya procumbens, P. linophylla, two handsome leguminous evergreen shrubs; Pimelia rosea, P. decussata, P. longifolia, Boronia paradoxa, with several other kinds and; the very beautiful blue flowering Hovea Celsii. In New Zealand and Tasmania I saw the latter used as a hedge plant. Than it, it would be difficult to name any thing more truly elegant. Good specimens at the exhibitions always had a telling effect, either singly or in mixed groups. Probably the best grown Hoveas in England were among the superb collections of plants at Mrs. Lawrence's, Ealing Park; Mr. Frazer's, Lea Bridge Road; and Mr. Baker's, Bayfordbury.

They were noted for their floricultural achievements at the grand tournament of Chiswick and Regents Park, London, some twenty-five years ago. How forcibly such simple reminders bring back to memory events gone by, in after years. Well do I remember the gallant Knights of the Pruning Knife and Spade, who then entered the lists of horticulture in those days; and with the true chivalry of good men, honorably tilted for the approving smiles of "Fair Flora." Thousands of fair women and brave men," looked admiringly on, while strains of sweet music rolled along the vistas of flowers, and softly re-echoed through the halls of "Pomona." Airs of peace and harmony cheered the victors and soothed the vanquished, whose broken lances proved how earnest the contest had been. Many who then took part in the floral jousts have since "fought the good fight," and conquered.

"They are quartered in the arms of death,
And will never fight again."

Yet in memoriam, their names will remain as evergreen as their native laurels, and as fresh as the meadow lands in "the isle of the ocean."

(To be continued.)

FRUIT NOTES.

BY A. W. H.

The following correspondence explains itself:

"The enclosed essay, prepared for the last meeting of the Fruit Growers' Society of Penna., may perhaps serve to instruct you on a hitherto doubtful question in fruit growing. After reading, please serve it as the dandy who scented himself with musk was advised by a kind hearted sympathising countryman, who 'knew what skunks was,' to burn 'em or bury 'em; and so destroy all evidences of my wickedness."

"PHILADELPHIA, *Jan. 9th*, 1874.

"*President of Penna. Fruit Growers' Association.*

"MY DEAR FRIEND:—

"I truly regret that it will be physically, morally and fiscally impossible for me to be present at the coming gathering of the clans on the 21st inst. Lest you misapprehend my meaning, I rise to explain. I don't mean to take *physic*, and so stay away from school, nor am I so *demoralized* that I can't come, nor yet do I expect to be put out of the way a la *Fisk*, and so prevented from coming. No, none of these causes will probably keep me away; but, among other things I will tell you frankly, yet (in deference to your known modesty) confidentially, that I could not think, after listening with so much pleasure and profit, to your *annual* addresses, of sitting patiently and meekly through a *farewell* address, so I couldn't. Like the good boy whose mother tried to coax him to be quiet while she went off visiting, I won't be pacified, I won't, I won't! And then you folks cruelly set me down, or rather set me up, to answer a question concerning a matter of which I can only say 'it is one of those things that no fellah can find out.'

"I have known of cases where a husband thought his wife bore him too many *children*, especially of one poor rich gentleman, of my native State, who burst into tears every time a new daughter came into his household; and they came to the number of *fourteen*, and never a he daughter among them. But children, you see, are not like fruits; you may hug them and kiss them, and dress them in all sorts of fine toggery, and spank 'em and spoil 'em, but you can't *eat* 'em; that is, not under our new Constitution.

"But now who ever heard of any one complaining that his trees bore too many pears, peaches, or what not? I always managed, thanks to a good sound digestion, and a generous spirit which prompted me to give to my neighbor all that I could neither consume nor sell, to make way with all the fruit that ever grew on my trees, that was not stolen!

"If, perchance, any one of our haughty-cultural friends should have trees, that out of pure 'cussedness' bear more fruit than either thieves, family, friends, bugs, birds or worms can possibly 'get away' with, and some perverse wicked specimens persist in hanging on the trees after all their lovely companions are fallen and gone, there let them hang by the neck, till they are dead, t'twill be a capital punishment for them, and the Lord have mercy on their souls! What business had the tree to bear even a single fruit that could neither be stolen, eaten by honest folks, nor stung to death by rascally 'curlycues.'

"And now, I wish you to bear me testimony, before any tribunal, that I have faithfully fulfilled the wise injunction of our honored fellah citizen, M. Twain, Esq., A. S. S., and answered wisely, and to the full, a question I knew nothing about, and set me down for

"Yours truly,

"A. DOUBLEYOU HAIRYSON."

ABOUT GARDENERS.

BY P.

The time when gardeners get on the move is at hand, and thoughts, which at that season have so often recurred to me, press on my mind again. Perhaps they will be considered worth expressing publicly.

There are really good gardeners who never do succeed in securing a situation for which they would be eminently fitted, whilst amateurs, as well as public institutions, can not find the right men they want, and miserable pretenders get into good situations, to the disappointment of their employers, and the detriment of gardening generally.

There ought to be a central organ for bringing good and intelligent gardeners into communication with those parties who have a legitimate call for such, leaving that many-handed monstrosity which goes as "gardener, coachman and useful," to the newspapers and the seedstores.

Sometimes a good gardener loses his situation, and two or three gentlemen would be glad to secure him for their places, but, there being no way of letting either party know, that they might come together, the former takes what he can get, even gives up gardening altogether, whilst the latter retain or engage an inferior man, for want of knowing where to make their application with an assurance or reasonable hope of success.

Those men who have first-class places, or desire to have them, should leave their address, together with a full statement of their terms, decription of place and expectations of the gardener, with the editor of a horticultural paper of good standing, where an especial book should be kept, into which these applications are to be pasted. In another book the list of the names, character, &c., of these seeking employment, should be kept. The employers then looking over the gardener's list, and the gardeners examining that of the employers', if the suggestion of an engagement is not left with the editor, who, of course, will charge both parties a proportionate fee when the bargain is made. In this way the interest of both employer and employee in the paper also would be secured, and its effect in promoting gardening increased. As it is at present, the getting of the right man into the right place is too much of a chance game,—a sort of lottery, and except to those amphibious creatures above mentioned, demoralizing, like all lotteries. Why should those who, by their mutual interest, belong together, play hide and seek, and trust to good luck to catch the right one? Gentlemen, when you want a good gardener, or a better one than you have, make public application, and state for how long the competition for respondents will be open, and don't be afraid of being too liberal, for we have to hear yet of the first case of the kind to have proved fatal to any one. But you gardeners drop that unwarranted pretense of understanding all sorts of things which, by the first glance at you and but a few minute's conversation, you are found out to be utterly ignorant of or incapable for. In this we allude mainly to that matter of cultivated talent, taste, æsthetic and practical education, called landscape gardening. No, my friends, profess to know all about keeping a place in good order, cultivating vegetables, fruit and flowers, but do not pretend to be landscape gardeners before you have actually learned —not imagined—to know what that means. You need not feel hurt or be astonished to be reminded of that; over-estimation is a very common weakness, especially with the half educated. We meet with the same inclinations to it in other professions, such as musicians, architects, painters and stage players, frequently. Learn what you can learn thoroughly, but do not dabble in what you never had the qualification for, nor even an opportunity to learn. You need not feel offended to have a landscape gardener come, stake out, and superintend plantations on the place you have charge of, but you ought to be ashamed to have so-called architects, and worse than that, common carpenters to build the green-

houses and conservatories which you have to manage. This branch of his profession a practical gardener ought to understand, though he need not be an artist, which a landscape gardener most emphatically has to be.

ENDOSMOSE.

BY S. B. HEIGES, PRESIDENT OF THE PENNSYLVANIA FRUIT GROWERS' SOCIETY.

Your notice of the explanation given by an English gardener, to account for the cracking of certain fruits and vegetables, should have received attention before this, but a press of labor prevented it. The means devised by you to prove the presumed law, do not, in my humble opinion, go far enough, *i. e.* they constitute only half an experiment. Perhaps my explanation of the phenomenon may be more clearly comprehended by the general reader, if I briefly state the law of endosmose and exosmose.

"Two fluids, separated by a partition or diaphragm, which one liquid wets (adheres to) more readily than the other, are thrown into currents, the liquid wetting the partition more easily, flows through the more rapidly, and consequently sends the greater quantity through the partition, and is called the endosmotic current from two Greek words, signifying impulsion or flowing inward. The liquid wetting the partition less easily sends the less quantity through the partition, and is called the exosmotic current from two Greek words, signifying expulsion or flowing outward."

Now, chemists have learned by a series of experiments upon various partitions, which liquids compared with each other are endosmotic and which are exosmotic. Pure water is endosmotic compared with all the juices of fruits and vegetables, either pure or diluted with more or less water. "A tomato placed into a saucer of water for twenty-four hours" is not the manner in which to perform the experiment. Nature's plan for cracking fruits and vegetables is entirely different. Those of us who have closely watched the cracking of fruits and vegetables upon healthy parent-stalks, have observed this phenomenon after a "spell of wet weather," as noticed by the English gardener.

By some means, which I do not profess to understand thoroughly, the juices become diluted, and extended to the full capacity of the fruit or vegetable, which accounts for the "watery" taste, so often complained of when fruits and vegetables ripen in very rainy weather.

Now, if the rain continue, or if it continue cloudy for any length of time, by means of which the skin of the fruit or vegetable becomes covered with moisture, endosmotic action sets in, the skin is distended beyond its capacity, and it cracks. I have performed the experiment time and again, by keeping the ground surrounding the plant saturated for several days until the fruit or vegetable becomes distended, as I think, by capillary attraction; then apply water to the outside, and the fruit will invariably crack. You perceive that I fulfil all the conditions of nature by saturating soil and air.

I have discovered that fruits with entire skins are most easily cracked, viz., tomatoes, grapes, plums, currants, etc. Those with a hairy covering or furze, like the gooseberry and peach, with those having an opening like the calyx of the crab apple, apple and pear, appear to be provided with a valvular arrangement existing in the hair, furze, or calyx, by which the excessive moisture escapes. The silicious nature of the skin of a matured apple entirely prevents the cracking by the means that I have briefly attempted to explain, as water does not wet it. I have frequently enlarged gooseberries by suspending them over water, and apples, by washing with water, slightly acidulated with sulphuric acid, without any evidence of cracking.

Almost all observers have seen plums and grapes that have fallen into a stream, with the skin bursted, if the fruit adhere to the peduncle. I have recognized this bursting by endosmose or by capillary attraction, as the means devised by nature, by which many seeds become separated from their pericarp, so as to come in contact with the soil under the most favorable conditions.

ONCIDIUM LEUCOCHILUM.

BY WM. BURNETT, GARDENER TO GARDNER BREWER, ESQ., NEWPORT, R. I.

This is a beautiful free flowering Orchid, from "Guatamala;" the sepals and petals are yellowish green, blotched with brown, the laballum is large and white slightly stained with rose; the flower spikes grow from seven to nine feet long, with several lateral branches, from one to four feet each. And by paying attention to a few things necessary to the habits and requirements of this lovely Oncidium, the Cultivator will be rewarded with a profusion of flowers. To grow and to flower this plant successfully, it should have a well drained pot, with a compost consisting of fibrous peat and sphagnum moss. Avoid breaking up the peat too much, as the plant thrives best, when the peat is rather rough. To secure perfect drainage, fill the pot to within three inches of the rim with medium size crocks, cover them with a layer of moss. In shifting the plant into a larger pot, remove the crocks from the old ball, where practical, and carefully separate the roots round the outside, and cut away all decayed ones, which will enable it to root more freely into the new potting material than it otherwise would do. The best time for repotting is when the plant is commencing new growth. A light position in the temperate house, is highly beneficial to the development of healthy foliage and large pseudo-bulbs; without these you cannot expect strong flower spikes.

It should be copiously supplied with water during the growing season, which is from June to September, with a temperature of 70° to 75°, and from October to May, 50° to 55°, with sufficient water only to represent the native dews. The beauty of the flowers, which last a very long time in perfection, claims a place for it in every collection. We have a plant here which has been in flower six weeks, and likely to last as much longer.

THE CONSTRUCTION OF HOUSES FOR WINTER GARDENING.

BY W. C. STRONG, ESQ., PRESIDENT OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.

I have a strong desire and a purpose, Mr. Editor, to visit your houses, which you say were modelled after my hill-side style, and yet which you think are an improvement. That varying forms and modifications should be required for different localities, is of course true. That differing interior arrangements, for the culture of various plants, should be made, is equally true. But I trust you will not regard me as arrogant if I say, after several years' experience with the hill-side system, that I cannot conceive how an improvement can be made upon this perfectly simple and cheap form. Of course I do not doubt that your form of houses is best suited to your wants and your position. But it is my decided opinion that for extensive winter work, either for fruits, flower or vegetables, the best position is a hill-side with a slope approaching as nearly as possible to the angle of 25°, and facing slightly to the east of south. This hill-side may be covered with one house, to *any desired extent*, with possibly two provisos, viz: that in case the house is heated with water the pipes should not be carried so high up the hill as to cause a too severe pressure upon the boiler, and also that in regions of heavy snow the length of the house in the other direction (not up and down) should not exceed 100 feet. By a practical test of five years I have found that a house 110 feet long by 112 up and down the hill is managed with complete success as respects heating, and with no trouble from snow, in the neighborhood of Boston. Another house connected with and alongside of the one just named, and which is heated with the same range of pipes, is 60 feet long by 100 feet up and down. The cost of heating and of managing this range of glass is so moderate that the experiment appears to me to be of public interest. Since I have already given a description of the plan of construction of this house in a former volume of your Monthly, I will not repeat the details unless you may desire it. Suffice it to to say, at this time, that this one range (two houses if you choose) with nearly a half acre of surface, is amply heated throughout the entire season of cold, to the various night temperatures of 45° up to 60°, in the different sections, as may be required by different kinds of plants, by the use of 50 tons of coal. This is an ample supply for our cold latitude. By comparing this result with other houses which I have of ordinary form, I find a very great saving of coal. I should judge that *at least* four boilers and double the amount of coal would be required to heat such a space of ridge and furrow houses. But this material saving in cost and in labor is not the chief gain. The great body of sunshine on such a protected slope, which is easily under perfect control, secures a steady summer temperature which I have not seen equalled by any other style. The heat does not fluctuate and is easily regulated in every section. So complete is the control that there is no reason why, in the same house, one section may not be constructed for the low temperature, and the free circulation of air suited to violets or lettuce, and another section be adapted to the high and close atmosphere of tropical plants. I cannot in the least doubt that this style of houses possesses great advantages for the purpose of forcing winter fruits, such as grapes, either in pots or planted in the borders, within the house. Now, Mr. Editor, I trust I

shall be pardoned for these rather positive assertions, since I speak from experience, and upon a subject which is of great importance to most of your readers. If you think it desirable to add to the detailed account of the construction of such a house and the various advantages in operating, I will revise a description which you have previously published.

Thank you, my dear sir, for your kind invitation to visit your houses. I should very much like, and possibly I will see them this next month. But you see I like my own style as well as ever. I wish I had not filled them with a thousand and one various things, but rather had tested them by a few crops. Well, I have, to some extent, and can turn out flowers by the wagonload at the cheapest possible rates. September was not the time to have seen them, but I wish you had given them a look. I think your practical eye would have said they were the cheapest possible in form, and that winter gardening by the acre would pay. If you should think it desirable, I would describe the new house, which you have not seen.

[Please do.—Ed. G. M.]

HINTS FOR AMATEURS UPON THE CULTURE OF A FEW FAVORITE ANNUALS.

BY THOMAS F. WEBB.

The Cockscomb, *Celosia cristata*, introduced from Asia. Sow the seeds in early April in pans or pots, in a rather light rich soil; nearly fill the pan or pots level, press down gently with the bottom of another; sow rather thinly, cover with fine soil a quarter of an inch deep, give a slight watering and keep sufficiently moist for the seed to germinate; then place in a hot-bed frame where a heat from 75° to 80° Fah. by day and about 60° by night can be maintained. As soon as the plants are about an inch high, pot them into two inch pots and replace in your frame as near the glass as possible, which will prevent them from being "drawn." Keep the plants in these pots until the crowns show themselves, and give the preference to those that are close and have well shaped combs, for those I find make the finest. Give plenty of air upon all favorable occasions after they have attained a moderate size, shade from the mid-day sun, and take care never to allow the young growing plants to become pot bound. The compost I have for several years grown them in, is maiden loam of a sandy nature, well rotted hot-bed dung, and a small quantity of leaf mould; also drain pots. As soon as the crowns are formed repot into four inch pots; after that shift on as the roots reach the sides, until they require an eight or ten inch pot, if really fine plants are required. Do not take them from the hot-bed until the combs are nearly full grown. From the time they are put in the four inch pots they will, if watered with rather strong liquid manure drainings from a dung pile, diluted with water every other day, form combs from 12 to 20 inches long, and 4 to 6 inches wide; it also gives that deep crimson color so much admired in them. They will remain in bloom and be an ornament to the Amateur's greenhouse until late in the fall.

Browallia demissa.—Is a pretty blue flowered annual from South America, can be had profusely in bloom the year round by occasional sowings; is good for pot culture in a rather light rich soil; is useful in bouquets, &c., in the season when blue flowers, as a rule, are rather scarce. Pinch out the tops of the young plants to induce them to grow compact. They will do well in four inch pots; can be used in summer as a bedding plant. A very good and simple mode of procuring strong healthy plants for winter blooming of this variety, or Elata, is in the early part of September to scatter some seed in the truck patch between the Lima beans or corn, where the young plants will soon put in an appearance and thrive from the partial shade afforded them. Take carefully up and put into two inch pots; water, and well shade until established.

Browallia elata.—Is a taller growing variety. The culture is the same as for demissa. The flowers of this variety are also blue.

Mimosa pudica.—Sensitive plant, introduced from Brazil. This peculiar plant is worth growing, the foliage in beautifully leafleted, and falls down close to the stem as if dead when touched. Sow the seed about same time as the foregoing annuals, in light loam and sandy peat, about a fourth leaf mould and river or white sand. This plant has a tendency to grow somewhat straggling to check which, pinch off the top occasionally. When fully grown they require an abundance of water to the roots. If a hot-house is at the Amateur's command, a second sowing of this can be made in August, and by the following spring will make large plants. The leaflets of this (also several other varities) Mimosa fold together at night. It will grow in winter in a temperature of from 50° to 55°.

Thunbergia alata.—This is a fine free growing climber from the East Indies, is yellow; in some instances the most showy are orange with dark centre, will do well cultivated as an annual. If a little shade and moisture is given, it will grow much finer, it being very subject to the attacks of the red spider, its greatest pest. It thrives in a compost of good strong loam, well rotted dung sandy peat, rather rough, about equal parts; place in the frame with the others, give rather larger shifts and rather more air than for the Browallias, &c., until they require a ten inch pot if, large plants are wanted. They will require some kind of support (unless grown for hanging baskets or vases). The cheapest and probably the best, is a young dead tree of the spruce fir or larch, from one to three feet in height, put firmly into the centre of the pot for the plant to run over, which it will cover by July. If expense is not a consideration, a wire trellis can be procured of any form you choose, either the conical or the balloon shape, are ornamental.

Gomphrena globosa.—Globe Amaranthus, from India, is an old favorite; it forms neat bushes; the flowers are a bright purple and of a round shape. There is also a white and a rose colored variety, they are however not cultivated to the extent of the bright purple; they are worth a place if only in contrast to the first. Clean the seed from the husk, and give the same care, soil, &c., as for the Cockscombs, with this exception, that the seed must be very thinly covered or it may fail to germinate. The above can be easily grown by the Amateur who possesses a truck patch frame only, with dung or leaves for heating material; let them remain in the frame until nearly full grown, then remove to flower stand or piazza, or window sill of dwelling house. They will give healthful recreation to the cultivator, also pleasure when well grown plants are obtained, which cannot fail to be done if the above simple hints are followed up.

THE ADVANCING PROGRESS OF OUR ORNAMENTAL GARDENING.

BY WALTER ELDER, PHILADELPHIA.

This subject deserves a regular annual notice in the columns of the well conducted and widely circulated *Gardener's Monthly*.

In our yearly rambles through commercial and private establishments, we see much to please and to tell of the rapid strides of advancement which our all-beautifying and refining profession is making upon seed lands; there are new and improved species and varieties of annual, biennial and perennial flowers and culinary vegetables, the seeds of which will be for sale next spring. There are also new and improved modes of culture, harvesting and threshing out the seeds and preparing them for sale.

In the nurseries we see new trees and shrubberry, new roses and herbaceous flowers, new bulbous and tuberous flowers; the species and varieties are numerous and all exceedingly ornamental and hardy. Of the evergreen trees and shrubs, many look as if they were penciled with gold; some have splashes of white and yellow upon their greens, of the deciduous trees and shrubs, some are adorned with variegated foliage, others are ornamental with blossoms, some have peculiar colored dark leaves, and others are of curious pendent habits.

The new and improved species and varieties of hardy herbaceous flowers, are numerous and very beautiful; they are fit accompaniments for the ornamental lignus class, in the adornments of grounds; so are the new and improved lovely climbing vines.

Among the tender glasshouse exotic plants, are new species and varieties are very numerous, and very diversified; their strange variegations are wonderful; the forms and habits of Lycopodium, Ferns, Orchids, Echeverias, &c., are curiously interesting.

Every year numerous parcels of land are bought up for private residences and are highly improved, older establishments are enlarged and more highly improved; many forcing houses are also erected upon private places; in short, the spirit of improvement is increasing among our wealthy citizens, and their appreciation for the art and science of gardening is shown by the good taste, they display in their improvements. There are many individual plants worthy of notice here, but we fear such notice would be too dry a sermon to most readers, so we refer all improvers to the advertisments in the *Gardener's Monthly*, and the catalogues of nurserymen and seedsmen.

The nurserymen and florists around Philadelphia, Boston and New York, have made large additions to their forcing houses, for the production of cut flowers through the winter, and have greatly augmented their collections of winter blooming plants, by the introduction of many new and superior species and varieties of various colors of bloom. Many of the glasshouses are so

constructed, that the plants are grown in *beds*, instead of *pots*, and the production of flowers is vastly increased thereby. They now with ease, keep up a perpetual stream of blossoms from October to June. Enough of the sweet scented species are grown to perfume the more showy, when made up in bouquets and other designs for public and private entertainments. And upon *special occasions*, to decorate churches and give greater interest to religious exercises.

EDITORIAL.

TRAVELING RECOLLECTIONS NO. 8.

When we speak of gardening, we understand variously according as our tastes or experiences run. Some take in the idea of an immense fruit orchard, and exclude all beside. Some suppose gardening to be the raising of "truck" for market, and would regard the association of plants or flowers as something superfluous. Even those with more cultivation suppose gardening to be but the care of a bit of grass and a few bushes, with perhaps a greenhouse for a few flowers. Only the few understand truly what gardening is. They take every thing that nature affords them, and make a living picture that will beat nature any day. It may be but a tuft of rough grass; but under their hand it becomes a soft velvety piece of lawn. Perhaps is is some coarse wild weed; but it soon loses its rugged exterior, and becomes the valued florist's flower. Perchance it is a tropical plant of some beauty; but the gardener is not satisfied with the gem as it came from the forest; but he turns it by careful culture into the handsome specimen plant. A mere vegetable or an ordinary fruit does not suit him; but he insists that his art shall produce him something that should astonish even nature herself should she condescend to sit at his table, or walk through his grounds.

It must to have been a great treat to the members of the Pomological Convention at Boston last year, to wander, as so many hundreds did last autumn, through the grounds of H. H. Hunnewell, at Wellesley, near Boston. With their ideas of gardening they were enthusiastically performing a useful work. Many of them had come hundreds of miles to advance the cause of fruit culture, one of the most enchanting departments of gardening; and it was evidently extremely enjoyable to them to note how very much wider was the range of possibility of pleasure in gardening, than any of them who had never seen a place like it, had ever imagined. Indeed those of us who have been more favored by an extended experience in the results of gardening, could hardly visit a place like Mr. Hunnewell's without feeling how few enjoy what gardening is capable of giving.

Mr. Hunnewell has suffered no material for gardening pleasure to go to waste. Rare trees and the best of fruits abound; and well grown plants are as abundant as the rare things themselves. One hardly enters the gate before this feature strikes him. The tasteful entrance, and the inviting road has hardly attracted his footsteps than a beautiful tree of the variegated Box Elder challenges his admiration. There is no doubt this is one of the most beautiful varieties of ornamental trees in the world. The peculiar shade of green of this maple seems well suited to the silvery white which constitutes the variegation. Here in the Middle States all attempts to grow it have failed; in the first place because our hot dry summers burn out the white portions of the leaves; and next, there seems to be a determined effort of the plant when grown here, to revert to its original green leaved condition.

Any attempts to detail the rare trees in the collection, on the excellent specimens of plants and flowers (which under the skill of Mr. Harris, Mr. Hunnewell's gardener, are many of them unsurpassed in this respect anywhere) would be an after-thought with most analysers of the beauty of this place, as attention is so closely riveted on a first view, to its landscape features. The entrance is well guarded, by a porter's lodge on the right, and on the left by a thick planting of trees, flanked by Rhododendrons and undershrubs. There is literally nothing especial to be seen, and yet the impression it gives, that there is something well worth seeing beyond, is so strong that we regard this as one of the most successful features of the ground. We do not progress far, however, before the belting begins to recede, and the width of the

beautifully shorn grass increases,—Rhododendrons and other flowering plants become more abundant, and special features begin to disclose themselves. One of the first of these—if our mind's picture is correct—is a straight avenue of purple leaved beeches, with a grass walk beneath, having for a terminal object in the long distance what appears to be a splendid well formed specimen of a white oak. Following the carriage road towards the house the arrangement of the trees and shrubs is such, that the scene seems to shift with every advance. It is in this, especially, that the planting of Wellesly is so great a success. As we ride in a railroad train, it often seems that we are still, and that it is the great world outside which is rapidly passing us. It is so here. However slowly we walk, every thing changes remarkably at every step.

Perhaps one of the pleasantest of the surprises we meet in rambling through the grounds, we feel as we come on the Italian garden. As a whole the grounds are level; but we find ourselves all of a sudden on a terrace, looking down some fifty feet on a scene in which the hand of art is everywhere apparent. Beyond this stretches a lozenge-shaped sheet of water of several acres in extent, bounded on the west by low tree-covered hills, and having on the northeast side a very large and beautiful building erected by some charitable hand, for the higher education of girls. As we saw it from the terrace, the sun was setting behind the distant hills, and the dark shade of the bordering woods reflected on the still silvery waters, made a picture of beauty we shall long remember. No former experience of a similar character has left on our mind so deep an impression. The Italian garden at the foot of the lake, is, as we have said, wholly artificial. In the level part, near the water's edge, the flower-beds are arranged according to various geometrical styles; and in them foliage plants, harmoniously placed, according to their colors, were so planned that the contrast one with another was perfect. Silver, gold and purple tints predominated; and even silver sand was called into requisition, in order to heighten the effect of some of the plants. Looking down on this picture garden, the scene was exquisitely beautiful, especially in contrast with the undulating black lines of hills projected on the golden sky by the light of the setting sun. The garden is reached by nine flights of stairs, carrying us over as many terraces which go around the amphitheatre in which the garden is placed. On these terraces are different plants, all made to have an artificial look. Sometimes they are white pines, trimmed into dense cones; now they are Irish Yews, in tubs; and again some trees, which, like weeping beeches, have of themselves an artificial look.

Leaving the garden, and wandering along the lake side, we come to a rockery and fern garden, one of the most natural and appropriate transitions from the very artificial garden, to the wild woods and waters beyond. In this respect the taste is perfect enough to satisfy the most critical landscape artist. To form a good rockery is one of the most difficult tasks in gardening. It should look like the work of nature itself, and yet nature rarely, if ever, gives us a piece of rockery, fresh from her own hands, that any gardener would care to take, unadorned, into his own work.

Of this effort of Mr. Hunnewell's, it remains only to say that it is as near reaching the perfect idea as it was possible from the materials at hand. Most of the visitors on this occasion were charmed with their walk through the rockery; and there is, perhaps, no greater measure of success than that the vast majority enjoy it.

A very beautiful feature is the English flower garden. This is shut off from the vegetable garden and the rest of the grounds by an Arborvitæ hedge, kept in excellent condition, so that the garden, with its well-kept grass and tasteful walks, with their well-filled flower beds, have to contain within themselves the capacity to give enjoyment, without depending on any aid but the heads of the deciduous trees, which, lowering above the bordering hedge, aid it in the privacy which is so essentially the strong feature of an English garden. In this garden the modern fashion of using Echeverias and other succulents, had play, and with good effect. Colored leaved plants, however, such as Irisene, Alternanthera, and the green but still somewhat artificial Chamæpeuces, were used here to advantage in connection with them. As a matter of interest to those fond of good effects from colored foliage, we may say that we were never so much impressed with a beautiful contrast as is made by Perilla nankinensis with the silvery Centaurea gymnocarpa, or C. plumosa. The variegated leaved Abutilons also come into excellent use in these forms of ornamental gardening. Sometimes it is very difficult to make these odd colors come into useful play; and we were never more im-

pressed with the difficulty of making the White Birch look well with the company of any average tree than on this visit to Mr. Hunnewell's. Near rockeries or buildings, it is one of the very best trees to use.

We have to rest satisfied for want of space with this dim outline of our recollections of this beautiful place. We leave this page of our memory with regret.

We returned towards home by the Boston and Albany Railroad, going through Worcester, Springfield, New Haven, and other well known and populous towns of Massachusetts and Connecticut; and but recently among so many New England men in the far west, could not but wonder that so many had left so much beauty and so many natural advantages for the dull monotony, and rigid rule of nature which prevails in so many of these distant places. Here were hundreds of acres of fair average soil left to grow up to white pine woods, or to the loving attention of beautiful wild flowers, while hundreds of articles which the soil would profitably grow were in the greatest demand in all towns and villages in which manufacturing industries so widely prevailed. The western farmer would give a good deal to have such valuable home markets close to his door; but here the farmer is first tempted by the water power everywhere inviting him, to drop agriculture for precarious trade; and when that fails him, he at once leaves home for another chance, no better, and often not as good as the chances he leaves behind. The scenery along this line has all the wild naturalness of any western road, with hundreds of additional charms thrown in. Here would be beautiful bays following the outlines of the rugged and rocky hills, sometimes the hills crowned by forests of oak, and then with dense growths of coniferous trees. The White Birch grew abundantly in the low land, in and among which the white water lily, Nymphæa odorata, floated in the little pools and streams, and filled the atmosphere for long distances round with delicious fragrance. The wild leaves were beginning, in this northern region, to change color, though but the middle of August, and the winy crimson of the Sour Gum, Nyssa sylvatica, and the Swamp Maple, Acer rubrum was everywhere seen. The common sumach, Rhus glabra, also made low thick masses of deep red; and the Virginia creeper leaped from branch to branch, all adding to the deep color of the sylvan scene. On the lower lands the high colors were relieved by the numerous yellow species of the Golden rods, and a fine brown was furnished by the fading fronds of the Cinnamon Fern. One of the most beautiful of these autumn colored leaves, and one which we never saw exactly of that peculiar russety tint before, was furnished by the Polygonum amphibium, which was very abundant along the water courses, as was also the Nasæa, which had a delicate rosy tint very beautiful indeed. It struck us that much use might be made of these wild plants, in garden scenery, where fine autumn effects are desired.

EDITORIAL NOTES.

A Deserved Compliment.—It is pleasant to find employer and employed in such cordial relations, as the following from the *Scottish American Journal* indicates:

Personal.—Mr. Campbell, formerly gardener to Mrs. Packer, Brooklyn Heights, was recently entertained at a complimentary supper, by some of his many acquaintances, on the occasion of his leaving Brooklyn to take charge of another place at Newport, Rhode Island. The evening was most enjoyable. Next day Mrs. Packer presented Mr. Campbell with a handsome writing desk, as a parting gift, and an acknowledgment of the services of the recipient. The *Scottish American Journal*, in its issue of September 18th, 1873, bore testimony to the skill of Mr. Campbell as a horticulturist. The good wishes, not only of his own countrymen, but of all other persons with whom Mr. Campbell had business or social relations, go with him to his new situation.

A Colored Florist.—The colored race have confined themselves in a measure to certain occupations, in which some of them have become quite distinguished. Of commercial florists, we know of but one in the country, Ephraim Grace, of Darby, near Philadelphia. We have not seen Mr. Grace's greenhouses, but, beginning in a small way, we understand he is quite successful.

The Christmas Rose.—There is a hardy herbaceous plant, Helleborus niger, known in Europe as the Christmas Rose, which is in immense demand there by florists for forcing. One firm recently offered 100,000 for sale at $12 per 100, which seems a high figure for English stock.

Prices of Cut Flowers in England.—There is a regular flower market in London—Covent Garden Market—in which the value of flowers can be regulated tolerably by that true measure, *demand*. In a recent report we notice that about the middle of March, Azalea flowers brought about 50 cents per dozen; Camellias about $1.00; Carnations, 75 cents; Heliotrope, 12 cents; Gardenias, $2.00 to $4.00; Roses, $1.00 to $2.00. The Stephanotus and Japan Spiræa are standard market flowers.

The New Japan Primrose has already been broken by English florists into as many varieties as the old Chinese Primrose has been. We do not hear of any double ones yet; but the production of these flowers is now so much better understood, that it will probably not be long before we see them.

Large Mignonette.—Mr. James Fleming, seedman of New York, exhibited in his store window this spring, spikes of Mignonette 17 inches in length,—almost all the length in full bloom. Who can beat this?

The Phylloxera an American Insect.—There has been no doubt in the minds of those who have reflected on all the probabilities of the case, that the Phylloxera or grape root louse is of American origin. But some of our grape-growers have doubted it. At the meeting of the Academy of Sciences of Paris, 20th April last, Professor Planchon not only reiterated his belief in the American origin of the insect, but had been able, he said, to trace the introduction of the insect into France with some American vines to Roquemaure in 1862 and '63. In 1865 the insect, he says, had already increased enough to do damage in some localities—American grapes, however, do not suffer, he says, so much as the European—and he hopes to unite some of the American character with the European in time, and in this way aid French vine culture.

The Curculio.—From time to time attempts have been made to drive out the Curculio by placing coal tar about the branches. This has failed. We have seen the insect crawling over half-dried tar, spread on boards in the fruit tree. Coal tar *smoke*, however, is a new idea. We find in the South Haven (Michigan) *Sentinel* the following, which we think deserves everybody's attention. We have heard of Mr. Windoe's success. He has plums in abundance, when the Curculio has those of other people. It would not take long to "smoke" trees, though they should need it every day. Gardeners have to do it in greenhouses, and why should not orchard folks take a little trouble, as well as other people. We are inclined to favor Mr. Windoes' idea, and should not be surprised but that those societies and individuals who have been offering good sums for Curculio remedies, will be called on to settle up. Mr. W. says:

By accident I discovered a remedy that with six years experience I feel safe to recommend as effectual. A year ago I gave the process to some members of our Society, and also to Mr. Wiley of Saugatuck, who promised to give it a fair test. There being so many worthless remedies recommended, I sought the experience of others before making this public. They failed to make the experiment, perhaps not thinking it worthy of a trial. But as the material used costs but little, and the *process* costs less still, at the request of several of the members of the Society I submit it to you. Most of our fine fruits are chance seedlings, and many of the methods of protecting fruit and trapping insects are accidental. So it is with this.

In the Spring of '68, while catching curculios by jarring and trapping, I had occasion to empty a kettle of coal tar which I had been using for tarring fence posts, and to destroy the same I set it on fire near my plum trees, not with a view to benefit the trees, but to get rid of the material. The next day I found that a plum tree near by, which was covered with the smudge, was deserted by the curculios, and I at once procured another supply, and continued its use on a part of my trees. From those so treated I obtained a good crop of fruit, while on the others, but few perfect plums ripened.

In 1869 I mixed one pound of sulphur with one gallon of coal tar, and, as soon as the fruit burst its petals, commenced its use. To make this convenient I procured a large frying-pan, fastened a long handle to it, the more easily to use it, and very early in the morning, while wet with dew, processed the trees, oftentimes making the foliage black with the smoke. This was continued each alternate morning until the fruit was as large as a small-sized hickory nut. The trees were a perfect wonder to all who saw the immense crop of perfect fruit; and it had to be thinned out to prevent the trees from breaking under their burden.

The following year, being absent at the proper time, nothing was done, and the result was no fruit at all. In 1871 I again tested the process, and also by furnishing the material induced a neighbor, who had some fine trees in his garden, to do the same. He was very incredulous, and it had to be *works* without faith that produced the results. From seven trees he sold $24 worth of fruit, not taking into account what they used while fresh or for canning. My crop was abundant; while on the other side, on the adjoining lot, a neighbor, who had trees, did not secure a plum.

Each year since I have continued the process with like results, while the neighbor before spoken of, being sick at the proper time, failed entirely. These experiments convinced me that with a reasonable amount of labor the plum crop is a certainty; and most varieties being annual bearers, will make it a profitable crop for market.

The Society returned him a vote of thanks for the valuable information.

American Potatoes in England.—In spite of an old notion which prevailed at one time that American Potatoes were no use in England, our friends, Bliss & Sons, of New York, have managed to make a favorable impression there with them. So much have they been encouraged, that they occupy a whole page of advertising in the London *Gardener's Chronicle.*

A Devoted Husband.—Our old fellow traveler, Josiah Hoopes, who has been for many years married to horticulture and science, could not resist the temptation of doing something for his little family; and though we had engaged him to stay at home and keep us company this season, he coolly tells us he will jump on the "Ohio" from Philadelphia on the 2d of June for another voyage to Europe in quest of something to learn. His wife is too exacting. He had better have had one of the old fashioned kind, like the rest of us.

OBITUARY.

JOSHUA HOOPES.—Of the good old school of American botanists of the last generation—now fast passing away—Joshua Hoopes deserves more than a passing notice. He wrote nothing of consequence. He was eminently a worker; and his work, gathered together with much care and labor, was always freely at the command of all who chose to make use of it. American plants gathered by Joshua Hoopes, are scattered in herbaria all over the world; and many an author has expressed his indebtedness to him in the course of his work. The great work of Dr. Darlington—*The Flora Cestrica*—of which it is not too much to say that it is *the* model work for a local flora, continually refers to Joshua Hoopes as having furnished valuable material to it. Botanists have sought at times to honor his devotion, by naming some new plant with his name. Mr. Buckley named a Texan plant *Hoopesia* for him, but it did not prove to be new, and the name, therefore, does not stand; but Dr. Asa Gray gave his name to a species of the composite family from the Rocky Mountains—*Helenium Hoopesii*—by which he will always be remembered. For many years he has been in failing health,—unable to enjoy the society of the friends of science whom he so much loved. He died at West Chester on May 11th, in the 87th year of his age.

It may not be out of place to say that Joshua Hoopes, a distant kinsman and worthy follower of his virtues, is often taken for the subject of this notice; but we hope it will be many years hence before any pen will be called on to render a tribute to his memory under similar circumstances.

MARK MILLER.—The death of this well-known western pomologist has been announced during the past month. Passing through an Iowa town last summer, we had the chance of a momentary shake of the hand, even then enfeebled by sickness; but his interest in fruit culture, and in the success of the American Pomological Society, led him, though weak, to attend the Boston meeting, where he served on various committees, and made himself useful to the last. He was a modest, unassuming man, with kindly feelings towards all, and one who felt above all that it was his business to work, and to work on in his own way irrespective of what others might do or say. He was at one time connected with the *Iowa Homestead*, *Western Pomologist*, and had more or less relations with most of the western agricultural journals. At the time of his death he was western correspondent of the *Horticulturist*, confining himself chiefly to fruit cultural topics. It is indeed in this respect that his death is a great loss to western pomology.

The papers report the death at Burlington, N. J., of Edmund Morris, at the age of 70 years. We suppose this is the author of "Ten acres enough,"—a little book which created considerable interest a few years ago.

Among the deaths for the month, we are sorry to note that of Mr. Hogan, of Mt. Auburn, near Boston. Mr. H. was one of the writer's early associates, and though it has not been our good fortune to meet with him personally for over thirty years, we have often heard him as highly spoken of, as he was regarded by his friends when we knew him long ago.

SCRAPS AND QUERIES.

CAMELLIAS.—*G. W. F., Los Angeles, Cal.*: "If you would be kind enough to answer a question for me, you will receive many thanks from the writer. Please tell me what Camellias are grafted upon, and where I can obtain a quantity at reasonable rates? Also, what is the best book for any information in greenhouse propagating?

[The single flowered Camellias root much more easily than the double ones,—and raising single ones from cuttings; double ones are grafted—or worked, as it is called—on them. Sometimes in the South, where the Camellia seeds freely, seedlings are used for stocks. The leading florists in Boston, New York, Philadelphia, Baltimore, Washington, Augusta and Mobile, sell stocks for grafting. Buist's Flower Garden Directory is a good book.]

THE FEMALE AILANTHUS.—There is a general impression that the odor—which to many people is so disagreeable in the Ailanthus—is confined to the male form; that the female tree is free from this objection. A St. Louis correspondent tells us that he has tried the matter by careful experiment, and finds the popular impression correct. He is propagating from the female plant only. The roots cut into small pieces readily grow. It is a capital street tree for culture in places where from dust and coal smoke nothing else will grow.

CULTIVATION OF WILD FLOWERS.—*Miss M. F., Dayton, Ohio*, writes: "The Gelsemium nitidum is not hardy in Ohio. The plant I had blooming in the house this spring was sent me from South Carolina. If you think it worthy of notice, please speak a good word for the cultivation of our wild flowers. The Hepatica triloba, Trillium grandiflorum and Claytonia virginica, seem particularly adapted to transplanting. I have now on a north exposure a dozen plants of the Hepatica; white, rose-color, violet and lilac, blooming in the greatest profusion, some numbering fifty or sixty flowers. They opened about the 1st of March, and now the last of April are in perfection. The leaves of last year, with a slight protection, such as the fall provides for all her spring flowers, are beautifully mottled with a rich red brown, and in some cases turn a bright crimson red. After the flower falls, the new leaves shoot forth, and the plant is still an ornament.

"The Trillium and Claytonia increase rapidly if care only be taken not to up-root them when planting for the summer's display. As these both die down, soon after blossoming, their place can easily be covered with annuals. These wild plants are within the reach of all, and yet how few even know them by sight."

[It is even too true. If our own example is better than our teaching, we may say that we grow every thing we can find—though it may have its home in a neighboring wood; and that we have more satisfaction from our hardy flower garden than any other part. We always thankfully receive and set out whatever may be sent to us.]

NAME OF PLANTS.—Somebody, who marks him or herself X. Y. Z., without any post office address, sends two plants for name, of which 1 is Cineraria senecioides; 2, Bryophyllum calycinum.

MALE HOP VINES.—C. E. Taylor, Fly Creek, Otsego County, N. Y., has our best thanks for a few roots of the Male Hop plant. In some regions they call a large form of the common garden hop the "male," though it is but a female. We shall be delighted if this proves what we want.

TREE PÆONIES AND LAURUS NOBILIS.—We suppose a negative answer must be returned to the following inquiry of a Canton, Indiana, correspondent: "Is 'Laurus nobilis' or Sweet Bay hardy in this latitude? Upon what are *Tree Pæonies* grafted?"

[Tree Pæonies are propagated by grafting the half ripe wood on roots of the herbaceous kinds.]

THE WEATHER IN OHIO.—The following is rather a bad report from Zanesville for the 1st of May: "Weather disagreeable; freezing, snowing, raining, and then vice versa. So far as my observation extends, the fruit buds are all safe; a few were injured on the evening of April 28th. Some of our neighbors report the peaches as being killed; but on my own ground they are all safe."

Drying Plants for the Herbarium.—Constant Admirer says: "I would be very thankful if you could inform me through your columns, the best way of preserving flowers by pressing them, and the best way of pressing them for herbarium. As Spring, with its abundance of wild flowers, is here, we would like to know soon. This, I think, will interest many."

[The approved plan is to place them between sheets of soft paper—which, like blotting paper, will absorb moisture rapidly—and press them under boards, or a screw press. The paper must be changed every day for a few days, or the damp paper will mould the specimens, or turn them black. The object is to carry off the moisture from the drying specimens as rapidly as possible.

A couple of years ago, Professor Alphonso Wood invented a press, which is a capital idea. It is made of wire—such as is used for common sieves—the meshes about a quarter of an inch wide. Two of them are used just as two covers of a book or portfolio would be. These are strapped together, so that any thickness of paper can be used. The plants are put in these papers as gathered. Soon after gathering, the wire portfolio can be put under a trunk, or other heavy article, to press them a little, and then hung in any warm place to dry.

In the writer's travels last year, he had one of these presses, and the opportunity taken to hang it out of the car windows, or on the side of the wagons, exposed to the sun going over the mountains, or by the camp fires at night; and this way the moisture went out through the meshes without *any change whatever being required* until they were dry. Two or three times a day the package would be *cut*, so as to have the inside of the mass made the outside, and so on; but the labor was wonderfully small in comparison with what we have had to do in our past life on similar expeditions; and many a time last year we thanked Professor Wood, and lamented at the same time that he did not think of the thing thirty years before.]

Treatment of the American Holly.—*B. B., Lebanon, Pa.*, writes: "I planted fifty Holly (American) in a mixture of good, strong sandy, or gravelly loam and leaf mould, or muck from the woods. My desire is to attempt raising therefrom, a small, (short) ornamental hedge. Should they be shaded the first year they are one foot high, and bushy)? or will heavy mulching with leaves do? You also say in the *Gardener's Monthly*, prune all evergreens when planting. I have had no experience with Holly, but know and have planted most of the rest, and have never pruned before planting. Would you advise the pruning of the Holly this Spring?"

[The soil and the treatment is good for the American Holly; but it, above all other plants, ought to be pruned at transplanting. Cut off every twig that bears a leaf. They will then push out an entirely new growth. No one need ever lose a Holly by this pruning treatment. They do very well in full sun.]

Grape Culture.—M. asks: "What is the *best* and most practical book on grape culture under glass?"

[We think Charlton's Grape Grower's Guide would suit you.]

Specimens of Plants.—Some of our friends have, of late, been sending us dried specimens, roots, or plants of what seem to them new plants of their districts—sometimes because they desire to know the names themselves, and at others, because they wish to gratify us; with either idea we are happy to fall in with. It is a pleasure to us in either case. The specimens are, however, often very poor—too small to identify, or make much use of. They ought to be large enough to show stem, leaves, flowers, and, if possible, some of the flowers so far advanced as to be proceeding to form fruit. Each specimen, if for a dried specimen, ought to be dried by light pressure, between the leaves of a large book, or thick masses of paper before forwarding, and when sent, protected by pasteboard on the outside. No writing of course on the inside, but any remarks about them in a separate letter. Then four pounds' weight can come by mail for one cent per ounce.

A few weeks ago we received a box done up in tinfoil, in which were a handful of the most valuable plants for the herbarium ever received. They were put in fresh as gathered; and most of them were rotten. We received no letter or any mark to designate where they came from. Among them was a *Simmondsia*, a beautiful evergreen shrub of which we have never seen before but a description; a shrubby *Dalea* with yellow flowers; *Paronychia ramosissima*, which we have never seen before; a pretty rose-colored *Orthocarpus*, and many others we should much like to have

in our herbarium. There was no clue to who sent them. When in Salt Lake City last summer, some of the ladies and gentlemen we met there promised to interest themselves in the botany of that region, and we guessed the plants belonged somewhere to the Wahsatch country; but Professor Asa Gray, who happened to call in at the time, and examined the mass, thinks they must have come from nearer the Pacific coast. If this meets the eye of the sender, we should like the dose repeated—very much.

The White Grub.—*L. B., Buffalo, N. Y.*, writes: "I have a piece of ground several acres in extent, which was last summer very badly infested with the *White Grub* (May bug grub). I have applied a coat of quicklime to the land this spring, but have no means of knowing how it will affect the grubs. Can you give any remedy that is better—more effectual than lime? or do you think a coat of that will kill them?

[The larvæ of the Lachnosterna quercina or May Beetle, is what we understand by White Grub in this part of the world, where we have suffered badly in times past by its ravages, with little comfort from any remedy we ever heard of. The best think we know is to keep the ground constantly stirred, so that the birds can have a chance at them. They revel in them as men do on oysters. After a year of this treatment we had no more trouble of any account.]

The Pomone.—*G. W. W., Bendersville, Adams Co., Pa.*, writes: "I noticed in the *Monthly* (Pomone) a work on description of fruits, &c., issued by M. Louis Van Houtte of Ghent. Please answer, and inform me where the work can be had."

[We have not seen a copy of this work in America. It could doubtless be had of any importing bookseller, or directly by correspondence with M. Louis Van Houtté, Ghent, Belgium.]

Bengal or China Roses.—A correspondent says: "A quarter of a century ago these roses were grown more than to-day; and if you have an old catalogue of T. Rivers, of about that date are many described. Of late we florists have neglected this class of plants, and few are to be found in the catalogues of to-day. The raisers of new roses appear also to have given up this class, *Chinas or Bengals.* As few novelties have appeared for some years, I think, however, I see indications of a change, as one or two good novelties have appeared the past season. It is to be hoped this may continue. As a class they are much hardier than the Teas,—and the most profuse bloomers, carrying their flowers into our cold winter weather."

Coleus (Dr. Gross.)—"Editor *Gardener's Monthly*, Dear Sir: In reply to article of Messrs. Miller & Hayes, in your May number, permit us to say this: the Coleus under discussion was originally sent out by us; it was a sport from the old variety Queen Victoria; and, as it was quite distinct from the parent, we preserved it. Mr Isidore Myers, who was then in our employ, suggested '*Dr. Gross*' as a name for it, in honor of the President of the City Councils. This name met our approval, so *it was labelled thus by Mr. Myers individually.* In November of the same year (1872), Mr. Myers left us and entered the service of Messrs. Miller & Hayes, and on the 20th of May, 1873, wrote to us from their office for two plants of it, to be sent to him by mail, to No. 5744 Germantown Avenue, Phila. This will also explain the ambiguity of their reference to 'Pittsburgh house' and 'Pittsburgh firm'—they are one and the same. After Mr. Myers had thus procured the stock plants, and they were re-christened, propagated from, and sent out under a new name, Mr. Myers visited Pittsburgh in January (?) last; and, while here, boasted what he had done, *i. e.* changed the name from *Dr. Gross* to *Nellie Grant, and sent it out as a new variety.*

It is impossible that Mr. Myers was ignorant of the plant's correct name; and as he occupies a prominent position in the greenhouses of Mt. Airy, we are forced to the conclusion that he has an account to square with his employers.

Please insert this as the correct history of this Coleus, and give whatever credit may attach to whom it rightly belongs.

Yours truly,

John R. & A. Murdock,

Pittsburgh, Pa.

Name of Plants.—A Hulmesville, Bucks Co., Pa., correspondent says: "I enclose a portion of two plants which are nameless among our floral critics; and, as they are owned by a good friend of the *Monthly*, I should be pleased to have them named in its columns. Let the large leaf represent 1, and the small sprig 2."

[1 is Vinca major variegata—2 is Sedum carneum variegatum.]

SHADE TREES FOR STREETS IN THE SOUTH WEST.—A correspondent writes that in St. Louis he finds Elms, Planes and Maples, generally the most vigorous and valuable varieties for street planting.

ROCKY MOUNTAIN SILVER SPRUCE.—A correspondent from Red Bank, Monmouth County, N. J., says: "Early in the spring, Messrs. Hance received a plant from the west called the 'Rocky Mountain Silver Spruce' (a branch of which I send you). Will you please inform me if this is Abies Engelmannii, referred to in your "Traveling Recollections?"

[This is not the Abies Engelmannii, but Abies Menziesii. We are glad to have this specimen, as we have had many inquiries as to what is the "Rocky Mountain Silver Spruce," extensively advertised. This species, Abies Menziesii, can always be distinguished from any other pine of that part of the world by its very sharp pointed leaves. They terminate in what might almost be termed a sharp spine.]

CATERPILLARS.—A Lancaster, Ohio, correspondent says: "The danger of an unprecedented number of Caterpillars this year begins to be evident. They appear much earlier, and in greater numbers. Every man that has trees should lose no time to destroy the first appearance of them. If they should get the start on us in this country, as they have in some places, they would be a terrible pest. They are easy destroyed if taken in time; but if neglected, they go in arithmetical progression."

NEW AND RARE FRUITS.

RED WARRIOR AND YATES APPLE.—The article copied into the April *Monthly* from the *Farmer and Gardener*, in reference to these two apples, indicates that they are identical. From Downing and Warder, however, they appear different. Mr. Downing describes *Yates* as "small, oblate or oblate conic, whitish-yellow, overspread, shaded, splashed, and striped with shades of red; many light dots. Flesh white, sometimes stained next the skin. * * March to May." His description of *Red Warrior* is "large, roundish-oblate, yellow, striped and marbled with two shades of red. Flesh yellowish. * * * November to March." Dr. Warder catalogues both as from the "South," but without description, save that he classifies *Yates* with *Maiden's Blush*, *R. I. Greening*, and other self-colored (*i. e. not striped*) apples. Thomas does not notice either.

The promising appearance of some of the southern apples recently fruited here, increases the interest in varieties from that section; and it is desirable to know whether these two fruits are distinct or identical. Will some of our southern friends give us light? R. J. B.

EDWARDS EARLY APPLE.—In the *Gardener's Monthly* for May, an inquiry is made as to the Edwards Early Apple. I am informed that it is an old variety, which originated with Edward French about sixty years ago, at Moorestown, Burlington County, N. J. It is also called Early Seek no Further, and seems not widely known. My attention has been called to it by William Parry, of Cinnaminson, New Jersey, and Col. H. C. Williams, of Vienna, Virginia, both of whom esteem it highly as an early summer apple for market and home use. The tree is said to be a moderately vigorous grower, healthy, and makes a large round-headed tree. It commences to bear rather early, and is a good bearer—nearly every year.

Fruit nearly of medium size, oblate; skin pale whitish-yellow, shaded, striped and splashed nearly over the whole surface with light and dark red, a portion of the splashes being quite dark; stalk short, small; cavity rather large; calyx closed; basin medium, slightly corrugated; flesh whitish-yellow, rather coarse, moderately juicy, tender, mild, pleasant, sub-acid; core small; ripens during August.—C. D.

NEW AND RARE PLANTS.

VERBENA GLORY OF AMERICA is considered by the Floral Committee of the Massachusetts Horticultural Society as one of the best blue Verbenas ever raised.

NEW DOUBLE ZONALE PELARGONIUMS.—Jean Sisley, who sent out last year Asa Gray, Aline Sisley, and other good kinds, this season announces a new set. George Sand flowers white in the house, but tinted with flesh color in the open air; Francois Pertusati, color "aurora" bordered with white; Carl Vogt, salmon-orange, a "new shade of color;" Talabot Amaranth; Louis Blanc, a cherry lilac.

ROSE MADAM MARIE FINGER.—*Mr. E. Y. Teas* says: "We send you, by mail to-day, a bud of Mad. Marie Finger, that we hope will reach you in condition, to show somewhat of its beauty. It is cut from a very small plant, so is not a fair specimen. Blooms on well grown plants are no doubt of great beauty. Firebrand, Kleber and others, have bloomed with us, and are very fine."

[It came in excellent order, being packed in damp moss, and proves to be well worthy of all Mr. Teas says of it.]

A NEW CHERRY (CERASUS LANNESIANA.—This beautiful rose-flowered Cherry, to which we have already alluded more than once, is a native of Japan, and was first introduced into the Jardin d'Acclimatation, in Paris, in 1870, by M. Lannas, of Montebello, after whom it has been named. The habit of the tree very much resembles that of the wild Cherry. The leaves are long-stalked, oval, slightly attenuated at the base, which is usually truncate, abruptly contracted towards the apex, and then ending in a long point, margined with very long and narrow teeth. The flowers, which are of a rosy flesh-color passing into pale rose, are long-stalked and arranged in umbel-like clusters, the bases of which are furnished with laciniated stipules. The flower-buds are of a bright rose-color. The petals are five in number, spreading, oboval, and bifid. The flowers are single, and nearly 2 inches across. Like those of almost all species of Cherry, they first appear in the beginning of April; and when the tree is in full bloom, it is almost entirely hidden under the mass of rosy flowers with which it is covered, and is positively brilliant in its effect. As plants of this species flower while very young, it affords valuable subjects for pot culture, with a view to table decoration. The plant from which our notice is taken was only 16 inches high, and the flowering branch, which was about as much in length, was densely covered with bloom. There is no question that C. Lannesiana is an ornamental tree of the highest merit, combining, when in flower, the effect of the delicate tinge of rosy apple-blossoms with the freer grace of the longer and slenderer shoots, and the brighter foliage of the Cherry tree. In addition to the ornamental character of this variety, it adds the advantages of being perfectly hardy and easily grown in any soil in which a common wild Cherry tree will live. The best mode of propagating it is by grafting it on the wild Cherry, either by cleft-grafting or by budding. M. Carriere, to whom we are indebted for the foregoing account, considers it probable that this is the type of Cerasus Sieboldii.—*The Garden.*

IVY-LEAVED PELARGONIUMS (leaves green).—Crimson ivy-leaved: Pale crimson; flowers small; free trailing habit; shining foliage. White ivy-leaved: White, tinged with rose; very large flower; very free; bright green shining foliage. Willsii (Wills): Pale rose; free flowering; half trailing habit; distinct and good. Willsil roseum * * * (Wills): Bright magenta-rose; very free-flowering; dwarf compact habit; makes a very distinct feature amongst bedding Pelargoniums. Peltatum elegans: Pale purple flowers; free trailing habit; very pretty.

Leaves variegated.—Duke of Edinburgh: Pale rose flowers; yellowish-white shining foliage; slender trailing habit. L'Elegante * * *: White, very large flowers; foliage pale-green, edged with white, changing to a beautiful rose in autumn; free trailing habit.—*Gardener's Magazine.*

NEW BEDDING LOBELIAS.—The English florists have taken in hand the improvement of this well-known plant. A correspondent of the *Garden* thus speaks of them: "Having seen in your columns (p. 233) some notes from your corre-

spondent, Mr. J. F. Robinson, on the varieties of Lobelia, which he considered best suited for making an effective display in the north of England, I think a few notes concerning the varieties of this useful bedding and edging plant from a cultivator in the south of Ireland may be interesting and instructive to some of your readers, especially those residing in Devon and Cornwall, where the climate much resembles that of the south of Ireland.

"As to the new Lobelias sent out for the first time this year, I got from Messrs. E. G. Henderson, at the commencement of this season, a dozen each of their new varieties, White Pearl and Mazarine Gem, and single plants of Drusilla and Claudia, to plant in a trial bed, and propagate if found desirable; also from Mr. Dixon (the sender out of the new double Lobelia) a new white variety, named Nivea. White Pearl I planted round a bed of the two new scarlet Verbenas, Prince of Wales (Turner) and Pomerania (Henderson), and during the early part of the season, for about a month, it was exceedingly effective and pretty, being of the true compact pumila type and babit, and the flowers considerably larger than those of the variety, in my opinion, falsely named Pumila grandiflora; but the flowers are not white enough, the upper lip having a decided bluish tinge; nor is it a sufficiently continuous bloomer, all my plants (the dozen having been divided into twenty-six before putting out) having, after being about a month planted out, developed themselves into good-sized green tufts, with only a single isolated blossom here and there, ceasing to be in any way effective round the scarlet Verbena. Mazarine Gem is quite the deepest blue and most lovely flower of the kind I have yet seen, and, when it first opened, was much admired; but its habit is much flattered in the colored plate published by those who sent it out, as it is there made to appear of a close, upright, and erect growth, whereas it is in reality of an exceedingly long and spreading habit. Planted as an outside edging to a double row of that exceedingly beautiful, and most effective, and much-too-little-known plant, the white variegated Tropæolum Minnie Warren, it made a beautiful contrast of colors, but spread quite into and under the leaves of the Variegated Nasturtium. Iresine Lindenii, planted between the rows of Minnie Warren, made altogether a most effective and beautiful bed. Of the other three new varieties, to which I have alluded, Drusilla is of a really erect and compact habit of growth, and bears flowers of a good deep shade, of a medium size, and almost without any perceptible eye. I consider it a variety well worth propagating for next season. Claudia is also an exceedingly pretty and effective variety, of a lighter shade of blue, with a large and distinct white eye, much resembling a new variety of last year's sent out by the same firm under the name of Princess of Wales. This is of a much more spreading and branching habit, but continued to produce its flowers well on to the end of the season. I consider this also well worth propagating as a companion and contrast to Mazarine Gem. Mr. Dixon's Nivea is quite the best and purest white I have yet seen, and produces a full-sized flower of the utmost purity, and is of a nice compact medium height and habit, quite superseding Lee's Purity, which I have had to discard as too coarse growing.

WHITE PANSIES.—*White Bedder* (William Deans.)—This is a very useful variety; it is a very showy grower, thriving where others would die; it is a free early bloomer, and is in good bloom in April when planted in autumn. It is profuse-flowering, the flowers rather small, but it makes a fine display in a mass.

Mrs. Felton (Hooper).—The largest and finest white in existence, having a very large quite peculiar bluish-violet blotch. It is unequalled as a show variety of this class, and as a bedder produces an effect which at once places it at the head of the bedding whites, while its blotch renders it quite original and distinct. It is of very vigorous habit.

Foam (Ware).—This is one of the very best whites. I have compared it for three years with all the rest, and believe this statement correct. It is of compact habit, has large, pale, showy, green foliage, and is a profuse bloomer. The flowers are of good shape, pure white, and of fine substance. It blooms well in May. This flower I have lately seen snubbed: but any one who likes to view it here in May may judge for himself. It has a blotch of violet blue free from stars.—*Gardener's Magazine.*

THE WHITE EVERLASTING PEA.—This fine old plant is not nearly so much planted as the colored form, though the white one is really the better plant of the two. It grows as freely as the old form, often attaining 8 or 9 feet in height, and it is just now one mass of snowy blossoms. The flowers being borne on long slender stalks

are well adapted for cutting, and they may be used along with the choicest exotics. It figures largely at present in some of the Covent Garden bouquets. When once planted in good loam it grows like a weed.—W., in *Garden.*

EARLY FOWERING CHRYSANTHEMUMS.—*Large Flowering:* Empress of India, Golden Queen, Alma Lilac Beverley, Christine, Aurea Multiflora. *Pompones:* Andromedia, Drin-Drin, La Vouge, General Canrobert, Rose Trevenna, Rose Marguerite.—J. C., in *Gardener's Magazine.*

A NEW SHRUB.—That superb new hardy flowering shrub, Xanthoceras sorbifolia, hitherto found to be so difficult to increase, has at last been successfully propagated by Messrs. Thibaut & Keteleer, of Sceaux, near Paris. It will be "sent out" by that firm in 1875.—*Garden.*

AZALEA LINEARIFOLIA.—Azaleas, which have given horticultural varieties by thousands, and which promise to produce as many more, are enriched by only one really new species—[introduced by Fortune a dozen, if not a score of years ago. Eds.]—the Azalea linearifolia, a little Japanese shrub, with downy twigs and deciduous leaves, narrowly lanceolate or even linear, from 2½ to 4 inches long, crowded together at the extremities of the branches, and flowers relatively large (2 inches in diameter), but narrow-petaled, united in bunches above the rosettes of leaves, purple-red. The perfect hardiness of this pretty shrub is even a greater recommendation than the beauty of its blooms.—*Gardener's Chronicle.*

A NEW DAISY.—A correspondent says, just as we are going to press: "I send your by this mail a plant of a Daisy called 'Queen Victoria.' It is from Europe, and we received it under the recommendation of being the finest Daisy ever sent out. After giving it a year's thorough trial, we feel free to say we have found nothing in its behavior to mar its good reputation."

[The flower came by next mail, and was grand.—ED. G. M.]

DOMESTIC INTELLIGENCE.

A GREAT VINEYARD UNDER GLASS.—During a visit to the classic region about Abbotsford in Scotland last summer, we heard very much concerning a wonderful vineyard under glass recently established by a Mr. Thomson, and we were urged to visit "Clovenfords," the name given to the locality by Mr. Thomson. It is well know that grapes cannot be successfully grown in Scotland, or indeed in England, in the open air, and therefore grape culture under glass engages the attention of fruit growers to a large extent. The humidity of the air is such, and the temperature is uniformly so low, that artificial heat is employed even in the warm months of July and August. It is indeed wonderful what quantities of fine fruit the Scottish gardeners continue to produce in their so-called cold graperies. We did not see any clusters of Black Hamburgs that would weigh *nine* pounds, but we were assured that this remarkable result had been reached, and that bunches weighing five and six pounds were not unusual. The clusters we saw compared favorably in size with those of our own houses, and the prolificness of the vines was about the same.

The vinery of Mr. Thomson at Clovenfords is perhaps the most extensive in England. There are, besides, several large houses on an adjoining piece of land to the extent of about 10,000 superficial feet of glass. Vineries, of course, form the prominent feature, and better-constructed houses could not well be conceived. There are, first, in one group, three span-roofed vineries, each 200 feet long and 24 feet wide, joined together at the southern end by another 130 long by 25 feet wide, which acts as a sort of corridor, connecting the whole together. Entering by this corridor vinery, what a noble sight is before one! What a promenade! To walk once through, inspecting first one side of the house and then the other, as we are in duty bound to do, we have a length of no less than

480 yards; and this is not all, as on the other piece of ground there is another vinery of the same character, also 200 feet long and 24 feet wide, and one of 50 feet; so that, supposing we had them all joined end to end, we have here a length of vines, laden with fruit, of nearly 650 yards, nearly 40,000 superficial feet of glass, and producing last season,—the second of their existence,—as estimated by Mr. Thomson, over 8,000 lbs. of grapes. The construction of these houses is exceedingly good, thoroughly substantial, and at the same time elegant. The angle of the roof may by some be considered very acute; it is, however, exceedingly well adapted for the late keeping of grapes (which Mr. Thomson desires more than early ones), the ventilation coming immediately over the hot-water pipes, and at the apex of the roof, gives the best possible circulation of air. The whole of these vineries, moreover, may be ventilated from the inside of the corridor in two minutes, so perfectly is it constructed, and so well arranged.

The vine borders are made much after the usual manner in England, ground bones being a large ingredient. They are formed both outside and inside the houses, being raised somewhat above the level, the roots of the vines being allowed to travel where they choose. A peculiarity of Mr. Thomson's method is that he has planted two sets of vines in each house, one intended as permanent, and located at the foot of the ridge, so that the roots can run outside, the other about the centre of the inside borders, which are trained only to the upper half of the roof, being intended to produce a crop until the others grow up, when they will be cut away. By this means Mr. Thomson has been able to secure a tremendous crop of grapes the second season after planting. The quantity of fruit in the Lady Downe's house especially was something marvellous.

In the year 1870 the whole of the vast number of vines in this great establishment were planted, so that this past year, 1872, was but their second year of growth, yet they have filled the whole space, and grapes were hanging in rich profusion over almost every foot.

It would be difficult to secure a large crop of grapes in this country from so young vines, and we are certain Mr. Thomson will not find it advantageous to crop so early. Under this system, however, he probably expects to witness the early decay of his temporary vines. As to the kinds of grapes raised, Black Hamburgs are largely in excess of all others. This is indeed regarded the prince of grapes for cold houses, in England as in this country.

A new grape, called the Duke of Buccleugh, is largely cultivated at Clovenfords, the whole of the vines in one house being of this variety. The berries are described as being enormously large, full of rich saccharine juice, and of delicious flavor. The vine is healthy, hardy, and prolific, very desirable qualities certainly. We do not know that this grape has been introduced on this side of the water. We shall take measures to secure a supply another season for trial. The price of cold house grapes in the cities of Manchester, Glasgow, Edinburgh, London, etc., is about the same as in Boston and New York. From sixty to eighty cents the pound rules through the season for the choicest berries. Mr. Thomson will find a ready market and a good profit for the entire products of his enormous vineries.—*Boston Journal of Chemistry.*

Appearance of the Pear Blight in Indiana.—*Mr. W. A. Ragan, of Clinton, Ind.*, says: "The first of these visitations, and the first to my knowledge that was ever seen in Indiana, was in 1844, and which in some special localities was very destructive, and almost entirely ruined whole orchards, while in others, no blight at all appeared. The effects of the blight where it was so bad in 1844, was also seen to some extent in the summer of 1845. From that time till 1870 it was almost unknown, except in memory or as a record of history. The blight of 1870, like that of 1844, was also confined to certain orchards and districts, while many of the best pear orchards of the country were passed by without a scorched or blackened leaf.

Uses of the Cherry Tree.—At the Michigan Pomological meeting, Mr. H. S. Chubb paid a tribute to the cherry tree, which, in every position, contributes in some way to the comfort and service of man. "Even the gum which exudes from its wounds is precious for medicinal purposes, and makes an excellent mucilage;" its fruit is handsome; is undoubtedly the best that is canned or preserved; for drying it has "no equal in the whole realm of commerce," its curative properties are universally conceded, and its rich color is the acknowledged standard of beauty on the lips of the most charming of women. Nor is this all. Its timber ranks high; "the household furniture next best to black walnut and Mahogany is made of Michigan Cherry, and thence transported to all parts of the world; the best printers' furniture is manufactured from Michigan Cherry, and distributed from thence to wherever civilization has carried the printing press. Cherry, grown wild in the woods of Michigan, is sought for by the manufacturers of school furniture, as the best wood they can find for their purpose. It is easily worked; receives a good polish; has a delightful lively color, and, in contrast with maple and walnut, gives a pleasing variety to decorative cabinet and carpentry work, which of late years have introduced a new charm to dwelling, office, store, railroad car, steamboat and private carriage. The wood is hard without being coarse or knotty, and its grain, though not prominent, is fine and beautiful. Thankful ought we to be, and proud, that we live in a land and enjoy a climate where this fruit and timber can be grown.

Flowers Among the Ancients.—The custom of using flowers on occasions of mourning and festival is of high antiquity. Roses were especial favorites of the Romans; their floors and couches were strewn with them at feasts; sometimes the ceiling was arranged to shower roses on those below, occasionally almost to suffocation. Among the Greeks.

> It was the custom then to bring away
> The blushing bride from home at close of day,
> Borne in a chariot, heralded along
> With strewn flowers, torches, and a marriage song.

The classic fables concerning them are innumerable. Daphne transformed to the Laurel; Syrinx to the Reed; Narcissus, emblem of self-love; Hyacinth, sprung from the blood of Apollo's murdered favorite, and Anemone from the earth where lay dead Adonis—are but few of those that might be mentioned.—*Canada Farmer.*

Neglected Culture.—The annual report of the New Jersey State Agricultural Society gives neglected culture as having the strongest retarding influence in that State on fruit culture and orchard planting. The old orchards, we are told, "are sorry sights to look at," simply for want of proper culture and manure. We know many such that, to our knowledge, have not had a shovelful of manure in fifteen years, removing during this time not only what apples the trees bore, but also a cutting of hay once a year. This, too, by excellent grain farmers, men who would not think of planting a crop of corn or potatoes without a full dose of manure for each. This has been the great difficulty everywhere, but few of those who plant orchards, whether large or small, being willing to give them the care they bestow on annual crops. No good farmer would think for a moment of planting his corn in a grass sod, and giving no cultivation—a treatment which has been very common for young fruit trees. We are glad however, to see of late years a great improvement in the management of newly-transplanted orchards, as wel as of bearing ones, and land owners are learning that trees kept in vigorous and healthy condition bring finer and higher fruit, and more of it, than such as are allowed to become enveloped in weeds, grass and brush.—*New England Homestead.*

Effects of Destruction of Forests.—It has been sarcastically suggested that one marked instance of the effects of destruction of forests in causing droughts, has been omitted by writers and speakers on the subject. It is recorded that very soon after the first settlement of New England, "the most terrible droughts were of frequent occurrence. The Indian corn and grasses perished." Thus, it is suggested, clearing even a few acres of forests of its trees, had a marked effect in producing droughts.—*Western Farmer.*

The First Nursery in Michigan, as far as known, was planted by W. L. Trowbridge, on the farm of his father, Gov. Woodbridge, in Detroit in 1833, where the latter had an orchard of trees brought from New York in 1825. In 1830 the Governor purchased 20,000 in New York, which were shipped on a schooner at Buffalo in the autumn, but were a total loss, as the vessel did not arrive till the next spring.

One of the first nurseries in Michigan was that established by E. D. & Z. K. Lay, at Ypsilanti in 1833, who came to Michigan for this purpose, and who the next year, built a greenhouse, which they filled with plants of a choice selection. The first purchasers of trees here were John Bertram, J. Henry, J. D. Pierce, and others of Marshall and vicinity, and in the course of five years trees were sold to most of the then settled counties of the State. Between 1837 and 1841, Willis, of Battle Creek, Dunham, of Kalamazoo, and White, near Monroe, started nurseries, most of which were soon afterwards closed. In 1841, George Foster started a nur-

sery in Detroit, on Michigan avenue, near Cass street. In 1842 Wm. Adair and Foster formed a co-partnership, and had a nursery known as the Michigan Gardens on the Brush farm in Detroit. Charles Hastings at Troy, Oakland county, at an early day established a nursery, which was subsequently removed to the Porter farm in Detroit, where, in company with A. C. Hubbard, and subsequently also, with Mr. Davis, the business was carried on. It is now conducted by Davis, Taplin & Co. In 1844 S. B. Noble had a small nursery at Ann Arbor.

Teaching Gardening as an Art.—We find the following very creditable article going the rounds of the papers uncredited. We make room for it on account of its intrinsic merit. Touching this subject, S. B. Parsons writes: Gentlemen of large income, with country places, the proper management of which would give more pleasure to a family than any thing else, are unwilling to pay more than $800 or $1,000 per year for a good gardener, whose knowledge is the work of half a lifetime. They will give $3,000 for a book-keeper, whose knowledge can be acquired in a year; they will expend one to five thousand dollars in a camel's hair shawl or a pair of horses, and yet would think themselves very extravagant if they gave $2,000 per year for a skillful gardener, who could produce for their use, Muscat grapes and all other luscious fruits, and who could make their grounds and gardens like a veritable paradise. Once establish the fact that a skillful gardener can be sure of $2,000 or $3,000 per year, and numerous young men would give their education that direction. Wealthy men, also, who expect to leave their sons large fortunes, would give their sons a horticultural education, both as a means of producing enjoyment for themselves, and as a profession upon which to fall back on in case of disaster. Young men so educated will never become base: the world is for them too full of delightful capabilities.

Mice in Hotbeds.—When mice get into frames, as they often do, they produce a fearful amount of mischief in a few days, if not destroyed. This may easily be done by mixing sugar and butter or lard smoothly together, in which a little strychnine is incorporated; spread this on thin slices of bread, and cut in small cubes and distribute them among the plants, and at the same time place vessels of water in some convenient place, where they may drink. Or if preferred, the phosphorus compound sold by druggists for this purpose may be used, but we have always had the best success with the first named mixture. In either case care must be taken that the children do not have access to the prepared bits of bread.—*Canada Farmer.*

FOREIGN INTELLIGENCE.

Forests and Rainfall.—In a contemporary we read that "Forests are not only fertilizers, but also the irregulators and reservoir of a country. In New England, and some parts of the West, farmers are planting trees to restore the fertility of the soil, and prevent the distressing droughts of summer. The history of the Isthmus of Suez has taught us a striking lesson in this respect. A few years ago, the whole region through which M. de Lesseps' famous canal now passes, was a sterile desert—the rainfall amounting often to less than an inch during the year. There were no trees to be seen far or near. When the energetic Frenchman began his gigantic enterprise, he at once directed thousands of trees to be planted in different localities. They grew up,—thanks to careful irrigrtion—and now the astonished eye of the traveler beholds blooming prairies and stately forests, where once all was waste and wild desert. But a still greater change has come over the climate; rain now falls frequently and abundantly,—the soil produces richly; and if that man is to be counted a benefactor, who can make a blade of grass to grow where none could be raised before? True glory belongs to him who has thus created, as it were, a fertile land, capable of maintaining thousands of industrious and happy citizens.

[On this subject, a friend, who has lately returned from a three years' residence in Egypt, informs us that the foregoing statement must be taken with much reservation, his own experience being that, during the entire period of his sojourn there, the number of rainy days was limited to three or four. The trees planted by M. de Lesseps along the banks of the Suez Canal, naturally thrive from their proximity to the water, but we are assured that the "blooming prairies and stately forests" above mentioned exist only in the imagination of the writer.—*Garden.*

Color Arrangement.—A few simple rules in the arrangement of flower beds will materially enhance the effect produced. Among these are:

1. Avoid placing rose-colored next to scarlet, orange, or violet.
2. Do not place orange next to yellow, or blue next to violet.
3. White relieves any color, but do not place it next to yellow.
4. Orange goes well with blue, and yellow with violet.
5 Rose color and purple always go well together.—*Canada Farmer.*

Method of Preserving Cabbages in Winter.—The following method of preserving Cabbages in winter is much employed in France: The cabbages are all stripped of their green leaves, and the rounded heart or head is hung up to dry for some days in an airy place. They are then very finely sliced with a sharp knife, and placed in thin layers in sieves, which are hung up in an airy place. The sliced Cabbage is also stirred up every day in order to facilitate the absorption of its moisture by the air. After this the sieves are exposed for some time to the heat of a cool oven, until the contents are thoroughly dried. Cabbage treated in this way does not change its color, and very much resembles vermicelli in appearance. It loses about one-third of its bulk in the course of its process. When quite dried it is kept in bags hung up in a very dry and airy place. It should be examined from time to time, and if there is any appearance of moisture, it should be again placed in the oven. If this is not done, it soon rots. In cooking it, it is first soaked for some time in water, and then boiled like fresh Cabbage, from which it is very difficult to distinguish it in taste when served up.

HORTICULTURAL NOTICES.

THE CENTENNIAL CONSERVATORY.

A meeting of the Committee on Plans and Buildings of the National Centennial Horticultural Society was held May 18 in Horticultural Hall. Mr. Thomas Cochran, of the Board of Finance, and Mr. J. L. Shoemaker, of the Centennial Commission, were in attendance.

Mr. Schwarzman, Assistant Engineer of the Park, presented a plan for the conservatory to be used at the great Centennial Exhibition in 1876. The proposed building is to be constructed of iron and glass, and will cover an area of 370 by 194 feet. In height it will be 71 feet, surmounted by what is known as a suspending roof. It will be divided into five compartments, a large one extending the whole length of the centre, and two small ones on each side. The small houses are to be used for palms and tropical plants. The large one will be a general greenhouse. The cost of this structure is estimated at $200,000.

Mr. Mitchell read a letter from Mr. Henry M. Whitney, Honolulu, Hawaiian Sandwich Islands, in which he proposes to send a display of sugar, coffee, rice, and choice furniture of native woods, together with a collection of rare island flowers, shrubs and ferns, including the celebrated tree, pulse-fern, of Hawaii, and a large bird's-nest fern. Mr. Whitney states he will send 500 plants, and says there are in that country 200 kinds of ferns. It is expected that the building will be ready to receive them in October, 1875.

On motion of Mr. Mitchell, the Committee on Plans and Buildings of the Centennial Horticultural Society recommended the adoption of the ground plans and elevations of the Horticultural Conservatory as presented by Mr. Schwarzman, and that the Centennial Commission be respectfully requested to carry them into effect, if within the amount appropriated, $200,000.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The spring exhibitions of the Pennsylvania Horticultural Society are better suited to the wants of the public than those held in any other month. The winter season is especially the season when the inhabitant of a large city appreciates flowers, and April—about the end of the winter floral season—seems the appropriate clos-

ing time for the whole year. The Exhibition Committee realize this fact, and endeavor to meet it; but unfortunately April is a busy month for the horticulturist, and only a few can take the time to help the good cause along. The exhibition was chiefly confined to plants and cut flowers. The plants, with few exceptions, were not well-grown specimens such as the liberal premiums offered by the Society ought to foster. Still there was a good deal to interest even the critical observer; while the great public, judging from the well-filled halls, were abundantly satisfied.

Mr. Wm. Joyce, gardener to Mrs. Baldwin, and Mr. Alex. Newett, gardener to H. Pratt McKean, had some excellent things among their collection, as they always have; and among the professional florists Mr. John Dick had many rare plants.

In Mr Joyce's collection there were two orchids not often seen on exhibition tables—Dendrobium fimbriatum,—with five dense clusters of flowers, and Bletia Sheppardi, not quite so lively a color as the more common Bletia Tankervillæ, but more graceful in habit and growth. Another curious orchid in this collection, though by no means rare,—Oncidium luridum—was remarkable for the number of its flowers, having about one hundred expanded ones. The rare palm, Thrinax elegans, which always attracts attention by its peculiar glaucous leaves, was also in this collection.

Mr. Huster, gardener to Mr. J. B. Heyl, always attracts attention to his plants by having well-grown ones of good old standard kinds. Here was Cereus or Epiphyllum Jenkinsonia, with many blooms on it,—a capital plant of some old fashioned Gloxinea—and the well-known Ardisia crenulata, covered with its scarlet holly-like berries. Among Mr. Dick's new plants various pencilled-leaved Marantas were conspicuous. Mr. Faust, florist of Philadelphia, had in his collection one of the best grown plants of Lomaria gibba we ever saw. This fern is an especial favorite with Philadelphia growers; and speaking of ferns we must not forget Mrs. Bissett, who makes a specialty of them, and always has some striking kinds among others well known. On this occasion was a very good plant of Cyrtogonium falcatum, a singularly leathery leaved organism for a fern. A crisped variety of Niphobolus lingua is also rarely seen, but a beauti ul form.

Mr. Alex. Newett had some pansies in which there were from 25 to 50 in full flower on each plant. Among his ferns was the rare Lastræa patens, with fronds about two feet long. It is one of the most beautiful of the stronger growing kinds. Another fern for the first time seen here we believe was Pteris nobilis variegata. The leaves look more like some Alocasia than ordinary ferns, and the greenish-white veins add to the illusion. Here was also one of the most striking plants in the room—a Franciscea eximia, with hundreds of flowers. It is one of the best old plants grown.

Mr. John Dick had a good collection of bedding succulents, now popular, besides treating the old gardeners to a sight of their old time favorites, Auriculas and Polyanthuses, a variegated Fuchsia called Sunray, and the curious crimson Arad Anthurium Scherzerianum, gave his collection considerable attractions.

Mr. Hugh Graham had a magnificent show of Azaleas; and some excellent Azaleas were among the large collection of plants contributed by Mr. Furguson of Laurel Hill. Mr. Mahlon Moon exhibited a large collection of evergreens n pots

The cut flowers were perhaps more perfectly arranged, and the premiums more vigorously competed for than usual. The leading competitors were John Dick, William E. Meehan, Eagle Bros., Graff & Crawford, Sherwood, and Dreer. Mr. Dreer, in the competition for cut roses, had some excellent flowers. We noted amongst the most perfect Marechal Neil, Jean Pernet, Celine Forestier, Bon Silene, Souvenir d'un Ami, Mad. Margottin—a variety something after the tint of Isabella Sprunt, but a rounder flower—Homer and Montplaisir.

The only collection of fruit was apples, contributed by T. T. Mather. The most interesting in his collection were some he calls French Pippin, a large yellow apple somewhat after the style of Fallawater. Mr. Hellings had some other apples which had been preserved in a fruit house, and were as fresh as if just gathered from the trees.

Mr. Chitty, of the Belleveu Nurseries, Paterson, N. J., has a plant of Iris iberica in bloom. It is to the credit of this gentleman that he should bring new plants one hundred miles to exhibit here; but the many who had the pleasure of seeing this beautiful hardy plant for the first time, probably never gave a thought to the enterprise which had thus done so much to gratify them.

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HINTS FOR JULY.

FLOWER GARDEN AND PLEASURE GROUND.

In what are called the natural styles of gardening, little use is made of edgings to flower beds; but in various parts of the grounds, as recently noted of Mr. Hunnewell's at Boston, the most artificial styles come into charming contrast with those of a more natural character. This sort of gardening will never die out, and there will, therefore, always be inquiries for edgings of various kinds. In the Middle States there is nothing, after all the trials, which seems so well adapted to edging purposes as the dwarf box; but in the South it is too hot in summer, and it is too cold for it in winter in the great north-west. Some years ago we urged on our readers the advantage of the dwarf forms of Arborvitæ for this purpose. We have had this idea again brought before us by noting a beautiful specimen of this dwarf Arborvitæ edging around the office garden of Otto & Achelis, of West Chester. We think it is next to the box, and in many cases equal to box for this purpose.

In hot parts the Red Spider is very troublesome to box edging, and indeed other plants growing in the open air. Few have any idea of the enormous increase of Red Spider in gardens, and the great amount of injury done by it. Thousands of plants set out in spring, dwindle or die out-right at this season, and the loss is set down to many causes but the right one. The leaves are first dotted with yellow spots, which grow larger while the green grows smaller, and at last die away altogether. If they are taken in time the insects will not increase much; an occasional examination will soon show their existence in occasional instances, and these may be destroyed by rubbing the finger under the leaves; but when it becomes numerous, the syringe must be used to throw water slightly impregnated with coal oil, in and about the leaves. Just enough oil to give an odor to the water will do. There is danger that an overdose will injure many of the leaves, but it can do no more injury than the Red Spider will, and if you destroy the insect with the leaves, a new crop of leaves will come out, which will be clear of all encumbrance. It is worth a little unpleasant feeling to get rid of such mortgages on your capital stock. Not only flowers but evergreens are very liable to this Red Spider pest, and particularly the evergreen tree box, all of which must be treated in the same way. The water must, of course, be drawn up by the syringe from near the surface, as oil will only float on the surface of the water. In this way there will be enough drawn up with each syringe full to serve the desired purpose. To distinguish the Red Spider, remember it is not always *red*. Its color is in a measure determined by the plants on which it feeds, just as a man is known by the company he keeps. Sometimes it is brown, or nearly green or white, and so small that many can not see it without a lens. The yellow spotted leaves, however, under which is a very fine webby process, will always tell the tale. The Red Spider, the scale and the aphis tribes, of which there are many species, are the chief insect enemies in flower gardening, all of which may be, and let us say must be kept in check by the above directions being attended to.

If any plants or trees, set out in spring, do not push freely, or have withery-looking leaves, prune back some of the branches. It is astonishing how it helps them. Also loosen the soil about the roots on a dry day, and within a few hours after loosening, roll or press it firmly down again. This pulverizes the soil, and pulverized soil does not dry like a very hard or a very loose one. Also cut away faded flowers, especially on newly planted things; it is surprising how it invigorates the languishing plant.

If flowers happen to get into poor ground, and do not grow well, a little manure-water will help them. If too strong it will injure. If the drainage of a stable-yard be used, about one gallon to ten of water would be safe. Where this cannot be had a tablespoonful of guano to about a gallon of water would do. Where none of these are at command, soap-suds, or any rich matter in about the same proportions may be used.

Plants set against walls and piazzas frequently suffer from want of water at this season, when even ground near by them is quite wet. Draw away the soil around each plant so as to form a basin; fill in with a bucket full of water, allowing it time to soak gradually away, and when the surface has dried a little draw in loosely the soil over it, and it will do without water for some weeks. This applies to all plants wanting water through the season. If water is merely poured on the surface, it is made more compact by the weight of water, and the harder the soil becomes, the easier it dries; and the result is, the more water you give the more is wanted.

Whenever the bark of any plants separates easily from the wood, and plants have ripened their wood enough to form prominent eyes in the axils of the new growth of leaves, budding may commence, and may continue with different things till September. It is an easy way to change trees we already possess into others more desirable, choosing closely allied species for the operation. Thus a common Ash might be transformed in one season to a fine specimem of a Weeping Ash, or the new Oregon Maple be budded into large trees of sycamore. Sometimes advantage may be taken of working mere bushes in to the heads of large growing trees,—transforming shrubs into nobles of the forest. Many trailing and meagre growing willows, cherries, maples. etc., are rendered very vigorous growers by being budded on strong growing kinds. Budding also affords room for tasteful combinations. Trees with different shades of foliage, hues of leaves, habits of growth, or color of flowers, may be worked on one common stock.—fancies of which kinds add much to the interest of a place when judiciously executed.

Many things do not take well by budding, in which case inarching may be employed. This is done by bringing together two half ripened shoots of different varieties, just shaving the bark at an opposite point in each, making the two faces of the shaved part meet, and then tying the two branches together at the junction, lapping the tying material (bast part is the best) so that the whole cut part is encircled by it. Most parties who intend to inarch, keep some of the kinds they wish to use as scions in pots, so as to bring them at the proper season in contact with the stock. Shelvings and other contrivances are resorted to to support such pots, in and amongst the branches. when the operation is to be performed at a height from the ground. A plan, however, which obviates all this trouble, and is generally successful, is to hang bottles of water near the points to be inarched, and the scion is placed in this, from which it derives enough water to carry on its vital function, until the union with the stock takes place.

We have so often spoken of hedge management in these *hints*. that it seems to us as if every one ought to know about it; but it is wonderful how few do. Only recently one whom we know to be one of our most attentive readers, and to have been one from the beginning, remarked, as he passed, what everybody calls a very beautiful Norway Spruce hedge on our grounds, that it was really beautiful, but it was a great error to have it so unnecessarily wide at the base. This hedge is five feet high, and five feet wide at the base, which makes it rather wider than it is high; of course it is trimmed into a truncate triangular form.

Now it is one of the essentials of a permanent prosperous hedge, that it must be at least as wide at the base as it is high, and that it must be trimmed with a flat or gently curved surface to a point at the top. The *light then has a chance to play directly on every part of the leaf surface*, without which it is impossible to have a hedge long in order. For that part which receives the greater share of sunlight, will get stronger, and that which gets the least gradually grows weaker, till a thin, poor base is the final result. This is one great object in pruning to remedy.

Another strong point to be gained is to weaken the strong upward tendency which, every one knows, is the *weakness* of hedge growing. Nothing weakens a plant more than to have its leaves taken off while young, just after they push, and before they are fully mature. If, therefore, the shoots towards the top of the hedge are taken off about the first week in June, while they are yet soft, that part of the hedge will be weakened, and the base, which for some months we leave uncut, will be correspondingly benefited thereby.

The lawns, walks and flower beds will still require constant care; and attention can be bestowed at this season on improving the form of trees and shrubs. In some parts of a large garden, trees are in better keeping with surrounding scenery when suffered to grow wild and pretty much to themselves; but near buildings, or in any part of a garden which is to denote high keeping, symmetry will ever be considered a chief element in beauty, and the aim be, what after all is the true object of gardening, an improvement in fact over the prettiest natural scenes. Trees and shrubs can be made as regular as we wish, by training a shoot here, and tying one there—now using a stake, and at another time employing a string. After a few weeks they will grow as you have placed them, and exemplify the adage, that "as the twig is bent the tree's inclined." The most malformed or ugliest specimen of an evergreen may be made an exquisite "thing of beauty" by such trifling care.

FRUIT GARDEN.

The thinning of fruit, watching of insects,—especially the borers in Dwarf Pears, Quince, Apple and Peach—and summer pruning are the main subjects of attention at this particular season. Where the soil is not very good, as may be noted by a weak growth of the trees, a surface manuring may be yet given with advantage. Every day's experience more decidedly shows the great advantages to the pomologist of this method of applying manure.

It used to be, and is yet to a great extent, the recommendation of writers to cut away raspberry canes as soon as they have borne fruit; fruit-growers know better now. The slight shade these old stalks afford, is agreeable to the new growth which is to bear next year.

The raspberry dislikes exceedingly to have hot sun pouring down on the earth about their roots, and a surface mulch left on so as to never be disturbed, is one of the best practices in garden culture. Under these conditions the canes of the tenderest kinds rarely winter-kill. If weeds come through the mulching, they can readily be destroyed by hand-weeding.

The time when currants and gooseberries mildew and drop their foliage is at hand. Some have found a mulch of salt hay to be good against these troubles, but in fact any thing that cools the surface, and thus helps to keep the atmosphere about the plants, is good. A heavy mulch of old corn stalks we have found to be excellent help to success in growing these fruits.

One of the best gooseberry growers we know has a very stony garden; and year after year the stones have been gathered and piled under the gooseberry bushes, until the whole row appears on a mound nearly two feet above the ordinary level of the ground. In this the roots are cool as cucumbers, and give fruit of the healthiest qualities in great abundance.

People sometimes are anxious to get rare kinds of strawberries to fruit early, and hence plantations are made in the fall. For general crops we think there is not much gained by fall planting. In the case of rare varieties, however, it is often worth a little extra trouble to do things well. The best way to proceed, is to get small pots with rich earth, and sinking them in the ground, layer runners into it. Such plants become very strong, and can be transplanted from the pots without injuring the roots, and will make strong stocks, which will fruit very well next year. We raised some excellent President Wilder's this way last year,—of course the result was not sufficient to enable one to form an opinion of its whole character; but we may say, that in spite of the excessively hot weather, it has turned out remarkably well. In regard to the best strawberries, it is remarkable that the bulk of all the thousands of bushels which come to the Philadelphia market is still Albany Seedling. Amongst amateurs there is no one that carries universal supremacy with it, as personal taste dictates the favorite. But certainly those which are grown the most extensively are Green Prolific, Triomphe de Gand, Jucunda, Agriculturist and Downer's Prolific.

In regard to training fruit trees, this is the most important month in the year. If a shoot appears where it is not wanted, pinch it off; this throws the sap into other directions where strength and vigor is desired. A good summer pruner does not leave much to be done in the winter time.

VEGETABLE GARDEN.

Preparations for the Celery crop is one of the chief matters in this department at this season. No plant, perhaps, requires a richer soil than this, and of all manures, well-decayed cow-dung is found to be the best. After so many trials with different ways of growing them, those who have their own gardens—amateurs, for whom we write—find that the old plan of sinking the plants in shallow pits is about the best. Trenches are dug about six inches deep, and three or four inches of manure then dug in, of which cow-manure is the best. They can be watered better this way in dry weather, when in these trenches, and it is so much easier to fill the earth about them for blanching purposes than when grown on the level surface. Salt in moderate doses is usually a wonderful special fertilizer for the Celery plant.

Late Cabbage is often planted in gardens between rows of potatoes, where it is an object to save space. Some fancy that the Cabbage is better preserved in this way from the Cabbage-fly, which they say prefers the potato; but on this point we are not sure. We do not think the Cabbages do quite as well as when they have the whole ground to themselves; but of course a double crop could not be expected to be quite as fine.

Tomatoes trained to stakes give the sweetest fruit, and remain in bearing the longest; but many cultivators who grow for size and quantity only, believe they have the best results when growing them on the level ground.

For winter use, Beets are occasionally sown now, and also Cucumbers for pickling purposes; but not often; and at any rate it must be attended to early in the month.

The Lettuce is another cool country plant. It can only be grown well in hot weather when in very rich and cool soil.

Bush Beans may also be sown for late crops. A very deep rich soil is necessary to tender, crisp pods. The Lima Bean will now be growing rapidly. It is time well spent to tie them up to poles as they grow. The poles should not be too high: about eight feet is enough. They commence to bear freely only when the top of the pole is reached.

In many amateurs' gardens late Peas are valued. It is essential that they be planted in the coolest part of the ground. The Pea is a cool country plant, and when it has to grow in warm weather, it mildews. The Marrowfat class are usually employed for late crops. They need support. All Peas grow better and produce more when grown to stakes.

COMMUNICATIONS.

GRAPE CULTURE.

BY CHAS. BULOT, FLUSHING, N. Y.

Much attention is at present devoted to the cultivation of fruit trees, and especially to that of the vine in this country; but this attention is more on paper than in practice in a serious manner. We have theories enough, but the practiced and experienced men, who could carry them out, are comparatively rare, or are unable to demonstrate their knowledge in the vineyard.

Vine culture, which has been the origin of so many fortunes in western Europe, received a good start during the years 1865, 1866 and 1867, in different parts of the United States where the vine was planted extensively. Suddenly, however, this progress ceased, on account of the poor success which attended a cultivation which had to suffer from ignorance of the nature and treatment of the vine. Soils were either badly chosen or badly prepared; the vines were not selected with relation to the differences of climate; and after these was a total lack of proper care and attention during the course of vegetation. The failure of open air culture was inevitable under such circumstances. Another capital mistake was the planting of too large an area at a time, and with too few vines. Thus some cultivators had only 400 to 500 vines to the acre, when there should have been from 4000 to 5000. In France, in fact there are scarcely ever less than 6000.

In some cases the inexperienced proprietors superintended the plantation and cultivation; in others, men from northern Europe, who, perhaps, had never seen a vine before, were charged with the duty. As the vine does not yield beyond the 49° of latitude in Europe, and, as it is evident that these foremen and gardeners could have obtained no practical knowledge yet in this country, it is not too much to say that a native of Greenland would have been just as capable of undertaking the labor as they were. These men may have been learned botanists or skillful gardeners, but they did not know the vine and the care which it requires. Nurserymen were thus compelled to abandon the vine, or nearly so, for want of competent vine dressers. Many Americans, who spared no expense to place the cultivation of the vine on a solid basis, thus saw their hopes dashed to the ground, and even concluded that the climate of this country was not favorable.

This is a great mistake; for though few vineyards in the United States yield more than one-tenth what they should, yet the proprietors are satisfied. What would these gentlemen say to the vineyards of Burgundy, or to those in the neighborhood of Bordeaux, or even to a simple wall of Thomery? The revenue from one acre cultivated on Thomery system, constitutes a respectable fortune after a few years plantation. The annual vine production of France alone is estimated to amount to *five hundred millions of dollars* ($500,000,000,) more than half of which is exported; and from this it can easily be inferred what an important *role* the vine played in the payment of the French indemnity! and that with its cultivation in this country, occupying the position it should, our national debt would also be paid.

When wine production has assumed its legitimate importance in the United States, six millions of people will find employment in it; and property of every description having any connection with it, will have doubled again and again, and the wealth acquired in it will have an element of stability, which is lacking in so many speculations.

I shall not attempt to decry *tea* as a beverage, although I might state the fact, that a mixture composed of three quarters water and one-fourth pure wine, with a little sugar added, warmed if wanted, and allowed to stand but a moment, would form a drink which would be a better digestive than the Chinese favorite. The saving, which would be thus affected, would amount to hundreds of millions of dollars annually, which are now put not only into the pockets of the Chinese, but of the *English*. The fact that the union lies between the 25° and 49° of north latitude, would enable every one to cultivate his own vineyard. But even excluding the use of wine as a drink, millions of acres of vines are none the less necessary for the dessert, cooking, and for preserves of all kinds. The fruit grape too, is so dear, that three-fourths of the world are deprived of its use.

The vine can be successfuly cultivated outside in every State of the Union, but beyond the 42° the varieties which can be grown are very limited, viz.: the *Concord*, *Diana*, *Hartford Prolific*, *Catawba*, etc. The neighborhood of New York City is more favorable. The Middle and Western States are well adapted, but differ according to climate and exposure. The Southern States are still better, near the border of the Gulf particularly; and all the American, with some European varieties, can be grown; most of the latter flourish remarkably well in southern Florida and Texas, but only in stony, sandy and dry, and elevated soils. *Sparkling* wine (Champagne) can be made easily in North and South Carolina, on account of the nature of the soils. The *Delaware* and *Iona* varieties make a very sparkling wine (Champagne). The *Walter*, *To Kalon*, and *Allen's Hybrid*, are also adapted to the same purpose, *I expect*, but I have not tried them yet. Delicious wine is made from *Adirondac*, *Israella*, *Ive's Seedling*, *Eumelan*, *Norton's Virginia*, and many of *Rogers' hybrid*.

Oidium can be thoroughly cured by the application of flour of brimstone, but it must be employed with intelligence, as all times of the day are not equally well adapted for the application. The disease appears, however, before the plant is so advanced as to be injured permanently. Sudden changes of temperature will, however, reproduce the evil, but the practical dresser will forestall its appearance. Our nurserymen have always been foremost in advancing the cultivation of everything calculated to increase man's comfort and happiness; and as soon as vine culture will become more popular with the public, our arboriculturists will again take their part in the duty in extending its propagation.

I have the most profound respect for the ladies of Ohio and Indiana, and I sympathise with them in their crusade against the poisonous alcoholic drinks which work such misery; but they can not confound a natural and harmless

drink with the poisons of the bar-rooms. The moral and pecuniary advantages which would result to the nation from the substitution of wine for these villainous compounds, would be simply incalculable.

It may be asked, how can such results be obtained? I answer, let the Government, or a State, county, or even village, or society, a university, even a private family, make the experiment on a few acres. Let them engage a horticulturist of the modern school—a man who possesses the requisite practical and theoretical knowledge, well acquainted with the country and its climate, and able to practically demonstrate the culture of the vine on the *Thomery system;* 1st, for private use, 2d, for market, 3d, on a large scale, with the best method of vintage. These three methods are altogether very different. *The improved system of Dalbray, applied to all kinds of fruit trees*, should also form a great portion of this instruction, which I believe to be one of the most essential and useful. Gardeners and delegates would diffuse a knowledge of proper treatment of the vine throughout the Union, if a public course of practice and lecture were given on the subject. The preparing soil, planting, pruning, palisading, disbudding, etc., of the vine could be systematically taught as well as the modern pruning of every kind of fruit trees. The culture of fruit trees, as conducted in this country at present, is no better than a kind of gross farming, and has not yet produced a bunch of *grapes*, nor even *pears*, *peaches*, etc., that would be considered worthy of having at dessert in Europe; I do except the size of pears and apples of California.

Dalbray began his public lectures on arboriculture in Paris, at the jarden des plantes, in 1840, and in three years the old routine system was done away with in France. A similar experience could be obtained in this country, and the results above mentioned would be realized in less than twenty-five years. *Dalbray* was the originator of *fixed natural living frame-works* for fruit trees, under its 200 regular profitable and fancy forms; and immediately on the publication of his work, those of *Dubreuil*, *Alexis de Pere*, *Malot*, *Hardy*, etc., appeared, which are highly spoken of by *Robinson* and *Thos. Rivers*, well-known eminent English writers.

The work of A. Fuller contains some of the best views as to the system of vine arbor in this country; and the author gives sound advice to the public, to go and select their plants in the nurseries in company with an experienced judge of the different varieties, forms and qualities.

If any of your readers should desire any further information in this matter, I would be very happy to furnish all in my power.

TRADITIONAL TREES.

BY JOAN.

The Boabab, a native of Africa, is said to be the oldest vegetable monument in the world. The trunk of this tree is only from ten to twelve feet in height, but thirty-four in diameter. Its leaves resemble those of the Horse-chestnut, being divided to the leaf-stalk. On one of the Cape de Verd islands, off the coast of Africa, was discovered a Boabab, upon the trunk of which two English travelers had engraven an inscription three centuries earlier, and the age of which was estimated to be five thousand one hundred and fifty years.

Next to the Boabab, the Yew is perhaps the longest lived of the whole forest, its age varying from one thousand two hundred and fourteen, to two thousand eight hundred and eighty years, and surpasses even the Oak in tenacity of life.

Among the oldest Yew trees on record, is the Fontingall Yew, which stands in a churchyard in Scotland. Its age is unknown, but it is said to have flourished at the commencement of the Christian era. Fountain Abbey, in Yorkshire, was built on a rough piece of woodland, on which stood seven large Yews. Tradition says, that the monks lived under these trees, until the Monastery was completed. Another most famous Yew tree stood in the church-yard of Dibden, a parish in one of the English forests. Finally, however, after withstanding the storms and tempests of many centuries, it fell to the ground during a severe gale.

But no tree in all the forest can vie with the Oak in picturesque beauty, or massive strength. It is the king of trees. Virgil calls it "Jove's own tree," as it was made sacred to Jupiter by the Romans. "Thou," said one of Homer's heroes, to a man who quailed, "art not made of the Oak, of ancient story." Solitary groves of Oak were preferred by the Druids, in which to practice the mysterous rites of their religion; nor did they perform any ceremonies, without the branches or leaves of this tree. The English feel an honest pride in the Oak, which they have chosen as their representative the world round. Other nations may possess finer, and more showy, and more fragrant trees, but the Oak is worth more to their country than them all. Very numerous are the traditions connected with this most famous tree. In Windsor Forest still stands what is supposed to be the identical Herne's Oak, immortalized by the mention of Shakspeare.

"There is an old tale goes, that Herne the Hunter, sometime a keeper here in Windsor Forest, doth all the winter time at still midnight, walk around about an oak with great ragged horns." Herne's Oak is now only visible to the public from the terrace of the Castle, that portion of the park in which it stands having been recently enclosed as an addition to the private grounds of the Duchess of Kent's residence at Frogmore.

The story of the "Royal Oak" is doubtless familiar to most of our readers. It was in this tree that King Charles sought shelter, when pursued by the enemy, at the Battle of Worcester. Although the original Oak has long since perished, in its stead stands a stately tree planted from one of its acorns.

The "Sidney Oak," at Penshurst Park, was planted to commemorate the birth of Sir Philip Sidney. There is some doubt, however, respecting its identity. Southey was of the opinion that it had been destroyed.

Oaks live from six hundred to one thousand four hundred years. Pliny mentions an Oak which must have been one thousand two hundred years old. Mr. South calculates that an Oak-tree forty-seven feet in circumference, cannot be less than one thousand five hundred years old.

Near the village of Cadenham, England, stood an Oak, which, for almost two centuries and a half, was an object of curiosity to numerous visitors. The story prevailed among the foresters, that on old Christmas morning (January 5th) the tree budded and bore leaves, and on that day only. There is no doubt but that this Oak did, in some years, show its first leaves on Old Christmas, and no leaves were found afterwards, simply because it was stripped by numerous parties accustomed to visit it on that day.

Lord Byron, on his first arrival at Newstead, planted an Oak in the Garden, and nourished the fancy, that as the tree flourished, so should he. It is inquired after by strangers as the "Byron Oak," and likely to attain great celebrity.

If the Oak is the king of the forest, the Ash may justly be termed the queen. Gilpin styles it the "Venus of the woods." There are singular superstitions connected with the Ash-tree. It is said to be offensive, and even fatal to serpents. According to Pliny, a serpent, if surrounded on one side by fire, and on the other by a barricade of Ash-branches, will escape through the flames rather than the fatal boughs. It is said in Great Britain, that if the Ash puts forth its leaves before the Oak, the summer will be wet. Evelyne states that there is no church-yard in Wales without a *mountain* Ash-tree planted in it; but this is not a true Ash. The Ash was long held in reverence for the cure of disease. White, in his *Natural History of Selborne*, describes the operation as practiced in Hampshire thus:

"While the tree was young and flexible, its stem was severed longitudinally; the fissure was kept open, and the child stripped naked, was passed three times, head foremost, through the aperture. After the operation, the tree was swathed up, and plastered over with loam. It was believed that if the severed parts of the tree united, the child and the tree gradually recovered together; if the cleft continued to gape, which could only happen from some great negligence or want of skill, it was thought that the operation had proved ineffectual."

Walnut trees sometimes attain prodigious size, and great age. An Italian architect mentions having seen at St. Nicholas, in Lorraine, a single plank of the wood of the Walnut twenty-five feet wide, upon which the Emperor Frederic III had given a sumptuous banquet. In several places in Germany, no young farmer is permitted to marry until he can bring proof that he has planted, and is owner of, a certain number of Walnut trees. In the Baidar Valley, near Balaklava, in the Crimea, stands a Walnut tree at least one thousand years old. It yields annually from eighty thousand to one hundred thousand nuts, and belongs to five Tartar families, who share its produce equally.

There is a tradition among the Tamanaks of the Orinoco, that the world was re-peopled after the flood from the fruit of the Palm. A man and a woman having taken refuge on the high mountain of Tamanacu, on the banks of the Asirvun, are said to have thrown over their heads the fruit of the Mauritia Palm, from the kernels of which sprung the present inhabitants of the earth.

It is said that the Weeping Willow was introduced into England by Pope, in the following manner:

The poet having received a present of figs from Turkey, observed that one twig of the basket in

which they were packed was putting out a shoot. He immediately planted it in the garden, and it became a fine tree, from which innumerable Willows have sprung.

A very curious story is related of a Groaning Tree. About the middle of the last century, a cottager who lived in the village of Bradley, Lymington, England, frequently heard a strange noise behind his house, like a person in extreme agony. Soon this peculiar sound caught the attention of his wife; then the neighbors heard of it, and finally it was noised aboad throughout the country. The groaning was plainly discovered to proceed from an Elm, which grew at the end of the garden. It was young and vigorous, and apparently perfectly sound. Vast numbers of people—among them the Prince and Princess of Wales—flocked to visit the wonderful tree; but no one seemed able to give a satisfactory reason for the portentous sounds, until at last the owner of the tree, in making an experiment to discover the cause of its sufferings, bored a hole in the trunk, and the groaning immediately ceased. It was generally believed to be the result of natural causes.

SUCCULENTS.

BY R. H. RATHBUN, SOUTH AMBOY, N. J.

This striking curious and instructive class of plants has apparently received but little attention as yet from plant growers in this country; a surprising fact, when it is considered that among them are found some of the most interesting and beautiful forms of vegetable life. Few plants equal some of the finer species of Agave for beauty of foliage, and neat and compact habit of growth; while among Cacti we find flowering plants of exquisite beauty; and the entire class of Succulents is more or less interesting, either as flowering plants, or for their remarkably quaint and beautiful forms of growth.

The class is a very extensive one, embracing several distinct orders, many genera, and a vast number of species and varieties; and the enterprising collector has an immense field open to him from which to make selections. In Europe collections of Succulents are formed with great enthusiasm, and many very fine collections are already in existence there both public and private. Among public collections, that at the Kew Botanical Gardens in England is probably first in point of numbers, and contains many noble specimens. A very large house is here devoted exclusively to Succulents, and forms one of the most conspicuous features of the place. Among private collections, that of Mr. J. F. Peacock, Sudbury House, London, is unsurpassed both in numbers and rare and fine plants. Several houses are here occupied entirely by these plants, and no care or expense has been spared to make the collection complete. It already contains nearly 150 reputed species and varieties of Agaves, over 500 of Cacti, and almost innumerable quantities of Aloes, Haworthias, Gasterias, etc., etc.

The plants are under the care of Mr. Joseph Croucher, a most accomplished cultivator, who has made this class of plants his special study, and whose knowledge of them is probably unrivalled.

So far as I know, comparatively few Succulents are as yet to be found in cultivation in this country. A few species of the various genera are generally to be found in our nurserymen's catalogues, but nothing like a varied collection. There are indications, however, that the taste for them is increasing, and we shall probably soon see collections formed here with a considerable degree of interest. It is a class of plants especially commendable to those of limited means and space, of the easiest possible culture as a rule, and generally of slow and compact growth. Quite a varied and extensive collection can be grown in a moderate sized house. For house-culture and drawing-room decoration they are particularly suitable; for, although appreciative of good culture, they bear neglect with much fortitude, and manage to preserve a respectable appearance under adverse circumstances that would be fatal to most other plants. Unlike flowering plants, too, they retain their beauty during the year, and are thus very valuable to those who are unable to keep up a varied collection of successional flowering plants.

I hope to see more attention paid to their culture, and may in a future communication treat of some of the genera in detail, giving lists of the most distinct and desirable species in each, with possibly some cultural notes.

CALADIUMS.

BY MANSFIELD MILTON, NORTH EASTON, MASS.

A genus of plants belonging to the *Arum* family, some of which are cultivated in their native habitats for their edible leaves, others for their edible roots. C. saggitifolium is grown in the West Indies for its leaves, which are used as a vegetable; while both leaves and roots of the well-known out-door C. esculentum are used as an article of food. The roots of C. bicolor are used as food under the name of Cocoa-roots. Many of the species are of a very acrid nature, the strongest perhaps being the dumb-cane C. seguimum, of the West Indies, which, when chewed, causes the tongue to swell, and destroys the power of speech. They are mostly natives of tropical countries, one species belonging to the United States, C. Virginicum.

About the years 1858 and 1862 there were introduced some very fine kinds from Para, in South America, into Europe. These were mostly of the variegated leaved kinds; and with crossing and hybridizing, some very fine varieties have been raised; and no class of plants better deserves a place in the greenhouses or stoves during the summer than Caladium.

Being a class of plants which luxuriate best with plenty of food and moisture, they require, when growing, a soil composed of loam, leaf-mould and well decomposed manure in about equal parts.

For raising new varieties they are grown from seed; but to increase the kinds dividing the roots is the method necessary to adopt, which can be done after they are started into growth, or before they do start. They are best started in small pots; and nothing but sand in the pots, as it prevents rotting, which they are sometimes liable to do if the roots have been divided, and the temperature of the house not very high. When they have filled the small pots with roots, shift into pots two sizes larger, if the bulbs are strong; but if weak, one size is sufficient, carefully spreading the roots amongst the soil when potting, which should be of the same mixture as recommended above. When re-potting them always disentangle their roots, especially if matted badly in the pots they are taken out of. If they are taken from one pot and put into another, without spreading their roots well, they often so remain until the soil around them gets so soured and saturated with water that there is no enticement for them to enter it, therefore checking the plant's growth. The pots in which they are grown should have plenty of drainage, as they require an abundant supply of water. If the bulbs are strong when started into growth, and large specimens desired, it is necessary to give them plenty of pot room, plenty of heat, and shade them partially from the sun, with a moist atmosphere to grow in. I say partially shaded, as I deem the coloring of the leaves is brought out more distinct when they receive plenty of light; and if there is plenty of moisture in the house, and plenty of water at the roots, the sun will benefit them instead of hurting. When watering and moistening the house, by no means do so by syringing overhead, or allowing the foliage to get wet, as nothing is more detrimental to the coloring of the leaves than water resting upon them. Keep the stages and pathways moist, and water abundantly at the roots, not allowing them to get once dry, and they will luxuriantly grow, and well repay all labor bestowed on them with the exquisite markings of their leaves, and vigorous appearance of the plants.

There are a good many varieties adapted for out-door decoration in the Southern and Middle States, but in the Northern States but very few of the fine leaved kinds will even exist when planted out, which should not be done before the month of June.

Persons having a greenhouse—large or small—should have a few of these attractive plants to grow in it after the common greenhouse plants, and put out of doors; and being deciduous, they require but little room during winter. I often meet with more people who fail in keeping them during their season of rest than when growing. This I find no trouble with if the roots are properly ripened before storing, which can be done by gradually withdrawing the water and keeping them in full blaze of the sun, allowing the leaves to remain until they completely wither. I keep them during winter in the pots they were growing in. I never shake out the roots then. I lay the pots on their sides, on boards laid along the top of the hot-water pipes, in a greenhouse where the night temperature is kept about 50°, and neither from damp nor dry-rot do I find any trouble.

From a collection of sixty varieties, I choose the following as the best and most distinct:

C. Alphand—Dark green, spotted with red, and crimson centre.

C. Alphonse Karr—Large leaf, red centre, green edge, with bright red spots.

C. Argyrites—A remarkable pretty little species, the small sagillate leaves being green, with white centre and spots.

C. Baron de Rothschild—Green leaf, with bright red centre and spotted edge, very pretty.

C. Beethoven—Ground color, white, with green veins, and pink tinge on centre rib.

C. Belleymei—Leaves white, with dark green ribs beautifully tinged with rose.

C. Chantinii—One of the oldest but one of the very best, with large leaves, having the edges of the leaf green; centre bright red, blotched with white.

C. Charles Verdier—Green, with pink centre and spots.

C. De Candolle—A very fine variety; dark green leaf, with white centre-rays; pink spots.

C. Duc de Nassau—One of the very best, with very bright red centre and white spots.

C. Derinck—Green, pink centre ribs, and white spots; a very desirable variety.

C. Dr. Lindley—A superior variety, with bright green edge, and bright red centre, blotched with rose-colored spots.

C. Duchartri—White leaf, with green veins and red spots.

C. Imperatrice Eugenie—A very distinct variety with glaucous green leaf; rose-colored centre and ribs.

C. Max Kolb—A very distinct variety with leaves a pale green; light centre, blotched with bright red spots.

C. Meyerbeer—White ground, with green veins and red mid rib.

C. Prince Albert Edward—A new variety, but the most beautiful I have seen. The ground color is green, thickly blotched, and spotted with pure white; mid-rid and veins bright red.

C. Sieboldi—A fine distinct variety with dark green ground, and bright red centre and spots.

C. Triomphe de l'Exposition—A handsome Caladium; bright red centre and ribs, edged with green; the most showy in our collection.

C. Wightii—One of the oldest I know of the fine leaved kinds, but one of the best, having large dark green leaves spotted with pure white and bright red.

PLANTS FOR THE SHADE.

BY WILLIAM SUTHERLAND, PHILA.

How often we hear the complaint that our garden is so shady that we can grow nothing in it. To all these I would say, grow hardy ferns. They are not only easy to manage, but the diversity in the forms of the leaf to lovers of nature, must afford as much pleasure as the most gaudy painted flower. They can be planted in beds, lines or clumps; and if a little attention is paid to the various heights of the leaves, etc., they will make quite as effective a show as geraniums or verbenas. With the aid of stones, mounds of rock work can be formed; and when planted with ferns, have a very pretty effect. Many of them being evergreen, can be grown in pots for window decorations during the winter, and not being so susceptible to the changes of the atmosphere, often succeed better, and give more satisfaction than plants costing double their price.

Hardy ferns are not at all fastidious as to the soil they grow in, being as often grown in one kind of soil as another, but succeed best in light woodland soil or leaf-mould, mixed with one-fourth sand, where they are planted as a permanency. The large growing varieties should have at least one foot in depth of soil, and when wanted for winter decorations, should be grown in well drained four, six or eight inch pots all the summer. And among the hardy ferns I know of none more suitable, or indeed more beautiful, than our own native ferns. A list of a few of the most popular for the purpose mentioned, I give below, which are often to be found in our summer rambles:

Adiantum pedatum (Maiden Hair Fern), with its stems of rich dark brown color, one foot in height, its fronds of spreading habit radiating like the spokes of a wheel almost circular.

Dicksonia punctilobula (Feather Fern).—It is among the most imposing of our native ferns, its leaves often reaching three and four feet, and looking not unlike a feather dusting brush in shape.

Cystopteris bulbifera, with dark brown stems and rich glossy green foliage, rising some two feet, and resembling the Dicksonia in growth.

Osmunda cinnamomea (Cinnamon Fern).—In fall time has rich brown masses of fruit, and its leaves with distinct veinings reaching three to five feet when fully grown, and as often seen growing in the strongest sun-light as anywhere else.

Camptosorus rhizophylla (Walking Fern).—One of the most interesting of the family. The fronds, as they grow, taper into slender prolongations, which droop and touch the ground, and take root at the apex, from which another plant springs.

Botrichyium fumarioides (Copper Fern).—Rising some four to six inches in height, of a copperish red color, the stems and leaves being of the one shade.

Lygodium palmatum (Hand Fern).—A most beautiful climbing fern, with small leaves about

two inches in diameter, resembling the open human hand. Succeeds best when grown in hanging baskets.

Aspidium acrostichoides.—Of a spreading habit; its fronds usually grow from one to two feet in length; of a dark glossy green, and retains its color all winter out of doors.

Polypodium vulgare.—Somewhat resembling the above, but not so compact in its growth—its leaves more upright, rising only one foot; of a rather pale color.

Asplenium ebeneum.—This fern is said to be found all over the North Temperate Zone; and though small, is very pretty; its fronds rise about one foot in height; of a bright green; its stems of a glossy black color.

Asplenium Trichomanes.—A variety of the above, with even smaller fronds, and more difficult to cultivate.

The various kinds of Hydrangeas, Cannas, Pansies, Mimulus, Coleus, etc., will all do well in a shady or half shady position. I have also had a bed of Vincas flower fine the whole season, where they did not get more than one hour's sun in a day. Panicum variegatum shows to best advantage when grown in the shade, as do also the different varieties of Tradescantia.

But as my communication is getting rather long, I will bring it to a close, promising to give some more observations, if acceptable.

RECOLLECTIONS OF SCENES AROUND THE UPPER LODDON, AUSTRALIA.

BY W. T. HARDING, AGRICULTURAL COLLEGE, COLUMBUS, OHIO.

[*Concluded from page* 170.]

But what strange londescript is this approaching us? Patrick, my companion, gravely inquired "if I had ever seen the likes of sich a murthering baste before." I frankly admitted I never had. My faithful henchman was neither a braggart nor a coward, but assured me "he was as bould as a lion, and would fight like a sojer if the ugly baste wanted a fight; why he (Patrick) was the man for Galway."

> "Sure no man than he felt boulder,
> Wid a musket o'er his shoulder,"

as he brought it to bear on the object moving towards us. We, the "fighting braves," assumed a belligerent attitude, well knowing that "when Greek meets Greek, the tug of war begins;" so prepared for the battle's shock. Seemingly defiant, or unconscious of danger, the mysterious object came onwards. As it drew nearer, I concluded from the manner of its locomotion that it was a biped of some kind, and with legs much like those of a man. That the legs were human seemed to admit of no doubt, while above them appeared something monstrous. A frightfully ugly guano, of crocodile form, clasped some horrid looking snakes, to which clustered loathsome centipedes, hideous tarantulas, huge frogs and toads, the odd looking platypus, wallaby and dingos, with feathered creatures of many kinds and colors. As the moving mass came nearer, my valiant friend whispered, that "it was aither the *ould lad* himself, or some murthering throat-cutting bush-rangering villain, that wud feel all the better for being shot than not," and proposed discharging both barrels at him at once, or "may be he wud destroy us in no time." I begged he would not, as it was unfair to shoot at the body of any thing joined to the legs of a man, without a challenge. "Then I'll give the divil a prod;" and suiting the action to the words, in a moment made a desperate lunge at the object; and knocked over a man. Mercy! exclaimed the stranger, what does it mean? "What does it mane, is it? ye dirthy spalpeen, covered with such unchristian-like bastes, I'll tell yees," replied Patrick. Gentlemen, in the name of heaven forbear! "Whist, ye ould parjurer, why does a wicked blashfamer like ye shpake of heaven? "Gentlemen, I am an honest man—a poor naturalist, collecting specimens of the native fauna, and my simple request is to be allowed to proceed unmolested, in the pursuit of my profession—for the good of science."

During the passing colloquy, I never felt less able to speak. The funny comedy going on almost convulsed me with laughter. Such a "roaring, side-splitting farce" I never saw on or off the stage before. Taking the poor naturalist by the hand, I assured him that no harm was intended, and apologized in the best way I could for the rough salutation with which my zealous and impulsive companion had greeted him. I felt hurt,—sorry indeed that such an untoward event should have happened him. His benign features, so deeply furrowed with years, bore a noble and handsome expression. Time had bleached his long, thinly scattered hair to the silvery whiteness which belongs to patriarchal years. As I grasped his honest hand, and gazed at his benevolent countenance, I heartily prayed that neither grief nor misfortune would "bring down his gray hairs with sor-

row to the grave." Readily comprehending the situation, we were soon fast friends. To satisfy the wondering reader, I will give the reason why the naturalist made this debut in such a motley vesture.

Mr. Garvis was his name, though generally known by the cognomen of "Ginger-beer Garvis." Why he rejoiced in such a name, was on account of his having first introduced that mild and much-loved beverage, to slake the thirsty throats of the sun-dried colonists. What the name of the other *benefactor* was, who first produced the hybridous fluid, a sort of cross between ginger-beer and ale, and known as Shandy-Gaff, I never knew. He (Mr. Garvis) was well known as one of the best ornithologists in Australia, and had probably sent more species of birds to Europe from that country than any other man, excepting Mr. J. Gould. This was his last excursion to the back woods, when we fell in with him on his way to Forest Creek, *en route* to Melbourne.

Those terrible pests, the "bull-dog ants," so called from their ferocious and destructive habits, had greatly annoyed the old gentleman by persistently getting among his specimens, and seriously injuring them. To circumvent their insidious attacks, he was compelled to carry them over his head and shoulders, and thus keep moving along in the manner we met, when Patrick greeted him with a prod of his gun-barrel.

I had fortunately secured a number of young Delabachia rupestris trees, better known as "gouty legs," or "bottle trees," so called from the singular bottle-shaped protuberances in the trunks of the old trees. (Afterwards I had the pleasure of having them under my care in the Experimental Gardens at Adelaide, South Australia, where I left them in a flourishing condition when I returned to England.) I also secured some Thamnochortus dichotomus bushes, a very curious shrub of grass-like habit, attaining to 6 or 8 feet high. The rather scarce Wightia pubescens, a little ornamental evergreen shrub, and Barklya syringifolia, than which nothing could be more beautiful when in flower. The odor too, is as delightfully fragrant as the English Wallflower, Cheiranthus cheiri flore pleno. It has altogether a marked character, and when blooming is completely hidden beneath thousands of beautiful long yellow flower spikes, and may be seen conspicuously a long way off. Near by the trunks of some weird-looking Melaleuca paludosa trees were splendidly decorated with several large clusters of Orchids, Dendrobium speciosum, and D. linguæforme, among which some Myoporum parvifolium had taken root, and were flowering profusely, as they generally do, either in a wild, or cultivated state. It is a first-class climber, or rather trailer, and is seldom seen out of flower. The pretty Calystegia marginata and C. sepium, with Sollya heterophylla, had woven and entangled together a grove of Banksias and Hakeas into an impenetrable thicket. The lovely Kennedyia Marryattæ affiliating with a number of Chorozemas, Dillwynias, Epacris, Hypocalymnas and Jacksonias, all in full bloom, were exceedingly beautiful.

Between the upper and lower Loddon is remarkable for the vast number of ferns, of various and interesting kinds. Among them the singular bird's nest fern Neottopteris marginata, and N. vulgaris are conspicuously beautiful. Their striking appearance, either in a wild or cultivated state, will always arrest the eye whenever seen. In general habit and character there is a marked dissimilitude. The dimensions of some of the finest fronds I measured were from 6 to 8 feet in length, and from 7 to 9 inches wide; and were perfect models of symmetry. In no other part of the world is the marvelous beauty of fern-life so wonderfully developed as in Australia, where they so charmingly mingle with the multifarious foliage and flowers, peculiar to the antipodes. To the lover of nature there is probably no part of the vegetable kingdom more interesting than the study of Cryptogamia, especially the order Filices and Lycopodiacæ.

With the editor's permission, I will quote a few lines from an article I wrote on "The Cultivation of Ferns and Mosses," to wit: Only imagine, but for one moment, and our thoughts are really bewildering, when we take into consideration the vast number of ferns which flourished in remote ages, and the density of growth which covered the earth and formed the coal-beds of the carboniferous era. How many thousands of years have passed since then is a mystery indeed. And what changes have occurred through the grade of time, from that age of the world until now. The mind's eye may look back along the vistas of time, when palm-like collossal ferns spread their lofty fronds above the dark and illimitable forests which covered the antidiluvian world. In the silent glens of New Zealand and Tasmania; in the remote

forest shades of Australia, Africa and America, I have gathered many a choice specimen for cultivation and the herbarium, while passing along. I well remember the way through an avenue of tree ferns we walked under along the road from Jamestown, St. Helena, on the way to Longwood, once the home of the Great Napoleon. Often have we sought the shade of the Alsophila Capensis, indigenous to the Cape of Good Hope; and in New Zealand, Norfolk Island and Tasmania, have wandered through groves of the sombre-looking Dicksonia antarctica and D. squarrosa, from 20 to 50 feet high. From De Witt Land, Western Australia, to beyond Moreton Bay, Queensland, in various parts of New South Wales, in Victoria and South Australia, have seen thousands of Alsophilas and Cyatheas; such magnificent specimens we shall never see again. If restricted to the culture of any one class or genera of plants, should decidedly choose them.

Having accomplished the object of my journey to the groves of Tarnagalla. was glad to accompany Mr. Garvis down to Forest Creek. After a forced march of two days, we reached that famous mining region about dusk, and halted for the night in a copse of Dryandra and Metrosideros bushes. After assisting our friend to suspend his specimens of skins, &c., to a bough, we discussed the merits of some broiled Wallabey and damper with a relish such as hunger only gives.

The miners' camp-fires fitfully flared as the darkness increased, around which the greedy grovellers were gathering. The last weary earth-worms had crept out of their burrows, with scarcely the semblance of human beings. Well might the poor untutored aboriginal look on with astonishment at the queer doings of the pale-faced strangers, and silently express his aversion with a shug of his naked shoulders, and grimly smile at the miners' delusions. No "noble savage," nude as he is, could so far forget his manhood as to cover his unfettered limbs with motley rags, and with a pick and shovel descend into a hole, there to delve and wallow in perspiration and mud, until his brother barbarian could not recognize him. Evidently such strange occupations were reserved for the more intelligent Caucasian. The poor blackamore could scarcely be charged with Phariseeism, even if he thanked God or the moon, that he was not as other men are.

Seated by the bivouac fire, listening as my philosophical friend, Mr. Garvis, related his adventures with the natives, who had shamefully deserted him in the bush, and carried off the cases provided for the specimens he had collected, yet in spite of every obstacle had succeeded in making one of the best collections he had ever made, when Patrick returned, rather jubilant from his new found friends in the flats. He (Patrick) had fallen in with some of his countrymen, who, he declared, had "trated him like a jintleman." Evidently his spirits had risen to the singing point; and sing he would, and did, as follows:

If all the goold that's in the world, was only mine, begorra,
Me legs wud budge, and to Melbourne trudge, I'd be homeward bound to-morrow:
Wid a favoring gale the ship would sail wid Mr. Patrick Carney,
A great jintleman, then the best of men, the pride of Castle Blarney;
Och! the pride of Castle Blarney.

Them pizonous blades called Centipades, bedad their likes was niver.
And from Bandicoots, sure Patrick's boots would turn away forever,
All sarpint kind I'd lave behind, and ivry vermint dirty,
And wid love I'd smile, on the Emerald Isle, and the charms of Kate McMurty;
Och! the charms of Kate McMurty.

I'd lave behind all Wombat kind, Emues and Kangaroos,
Them blatherskates called Parokates, and screaming Cockatoos;
For there's no place I'd love to face, like the one beyond the ocean,
Where jocvial Irish nabors, are angels sure bejabers, in the land of me heart's devotion.
Och! The land of me heart's devotion.

With a true hybernian love for "the ould counthry," the celtic Australian remembered "Erin's green Isle" with a fond recollection, which neither time nor distance could ever erase from the tablets of his soul. Who knows but what poor Patrick felt as keenly as ever did an "exile of Erin," that "absence makes the heart grow fonder" for the land of his heart's devotion. Unburthening his feeling with a song, he recalls the time when he, a rolicking young fellow, the pride of "Castle Blarney," was smitten with the charms of Kate McMurty. The jintlemanly treatment he received, had infused him with the fulness of love and patriotism, which only yielded to the "drowsy god's" embrace, as the refrain of "the land of me heart's devotion" was silenced in slumber.

OUR GREENHOUSES.

BY F. W. POPPEY.

The majority of our greenhouses—sometimes called conservatories—are not what they ought to be, when considered as contrivances for the cultivation of exotics. Even in some commercial establishments—but principally in private places—they are, as a means for their immediate purpose as complicated, clumsy and expensive, yet poorly adapted to it, whilst for display and enjoyment, they are not unfrequently totally unfit. Conceived and erected by unqualified men, and and often managed by incompetent would-be gardeners; men who—not gifted with a natural instinct for æsthetics—never had an opportunity, nor cared for having one, to cultivate their taste, are intrusted with the office, to provide most refined enjoyment to a cultured class of people. In extenuation of their short comings, we must admit that the circumstances under which they labor would make it impossible even for a more skilled and educated man to give entire satisfaction; for the houses with which they are compelled to get along, are not such as to make their task an easy one. I will endeavor to point out some of the main faults, together with their remedies.

Why should a glasshouse, when built for private use, though for the same object, be different from one intended for commercial purposes? If a peculiar style of a propagating house, a vegetable pit, a forcing house, or a house to rear a variety of plants in, is the best for a commercial establishment, then it is the best for everybody who has use for it. The nicer workmanship, better glass and more elegant and expensive appurtenances, do not affect the style. How does it happen then, that we meet so seldom with practical houses on private places? It is, we think, that the owners—the "eminent amateurs" themselves—don't know exactly what they want, and employ the wrong men to build their glasshouses, and make it next to impossible for a gardener to derive and to give that satisfaction he would, if they were built as they ought to be. Those with whom "expense is no object," deserve less sympathy for not getting what they are willing to pay for, as by advertising they would secure the best plans, and thus avoid mistakes at the start, which are afterwards hard to correct.

One of the greatest, though common errors, is the building of a lean-to house. There is hardly an excuse for a lean-to, and certainly none, when a back wall has to be erected on purpose. This back wall and the shed—which are generally attached to these houses—costs more than as much glass again would, and cause a considerable part of the glass roof in front—if it runs clear up to the wall—to be as good as lost. Why there should be a dark wall and a shed at the north side instead of glass, I cannot understand, as that part of the house would be an eligible place for Camellias, Azaleas, Orange-trees, etc., etc., and for certain plants to be kept through the summer, as well as for propagating. To regard stages, which we also meet with in these antediluvian structures, almost as nuisances, is becoming more and more general; and we hope to see in the next century of our national existence, no more of them.

These lean-tos are not warmer as is pretended, nor cheaper than half as high span-roof houses; they occupy as much ground, and have not the benefit of the sun as those facing east and west. In winter—and that is the season for which we mainly erect glasshouses—the sun gains effect late in the forenoon, which raises the temperature towards and during the middle of the day very rapidly, even to excess, when soon after mid-day nearly all is lost. The plants in such a house have the tendency to grow onesided, unless frequently turned; and any thing of a nice, tasteful and pleasing arrangement of them, is entirely out of the question.

For rearing plants, when nothing but their thrift is aimed at, simple span-roofed pits are now conceded to be the best; but when display is the object, then we ought to build the house in such a manner as will not, by its style and inner fixings, preclude a decorative arrangement, or, as it were, the laying out of a sort of garden—a winter garden.

The common style, in which even the larger span-roofed conservatories are built, with their front shelves running all round, and their beds or stands in the centre, neither present any facility for a tasteful display of the plants and flowers, nor to the visitors the means of enjoying comfortably those pleasures a well-managed conservatory is always sure to offer.

A conservatory ought to be a structure—not for rearing, but solely for exhibiting plants when in their highest state of development, and a pleasant retreat to pass leisure hours in, even in summer. Its style and its manager, therefore, must be adapted to that object; but alas! where do we find the one together with the other? How many of those men we find employed as gardeners, charged with the care of sometimes quite extensive glasshouses, ever had an opportunity to acquire the requisite skill and cultivated taste? Born and reared in poverty, excluded from refined associations, and possessed of a scanty education, is it to be wondered that they can do no more than put their plants in rows, just as a dry goods dealer puts his fabrics on the shelves? There are men who publish books on the construction of glasshouses; others make it their business to build them, evidently (judging from their works) knowing no more about what they are doing than the too-confiding amateur himself. The monstrosities produced by these men, together with the enormity of their bills, discourage others, who are too wise to be taken in that way, and thus instead of promoting, retard the development of that pleasant and instructive art of indoor-gardening.

Whilst the conservatory proper should be conveniently near to, and if possible, connected with the dwelling, "*the house*"—the greenhouse on the contrary, ought to be hidden from view, but not as we find them on some places, half a mile one way, and the gardener's cottage the same distance the other way. In this respect we occasionally observe a deplorable want of practical sense and forethought, which is no compliment to the sagacity of those concerned in the arrangement.

That senseless combination of a hot and cold grapery, with a plant-house in the middle—between them—is, in my opinion, one of the worst arrangements we could think of. As a grapery is never a beauty in itself, and during the greater part of the year a very unsightly concern, it ought to be built solely with a view to its immediate object, and in the construction not a dollar be spent for questionable effective purposes, for during the comparatively short period in which the crop is growing, and ripe, the plainest structure is beautiful, as it is the vines with their luscious load that secure all the interest of the visitor, and leave very little of it, if any, for the work of the carpenter.

Except in conservatories, I could never see a good reason for the introduction of front lights. Being in proportion to the roof so low, they give the house the shape of a dog-kennel, which is no improvement on the pit, necessitate two plates, and are for admitting air, no better than ventilators in the wall. The upper plate takes away as much, if not more, light and sunshine, as the sashes below admit, so that I cannot see any justification for the increase of the expenses, and the lesseniug of durability in the construction. The rafters and bars should be levelled smoothly, without any mouldings, as every dark line is a loss of light, and every groove a harbor for vermin and dirt. The walks should not be flagged or paved, as this makes the house too dry, and increases the labor of keeping it clean and sufficiently damp. The fear of getting our greenhouses too damp is an importation from England, on which our protective tariff has not had that effect it had on better things. Our winters and the hygrometrical condition of our atmosphere are so different from that of Old England, that principles which hold good in such matters there, have to be modified here. Besides this, it seems to be the tendency in England to make every thing on a "*gentleman's*" place as expensive as possible; but here even the richest men think it folly "*to pay too much for the whistle.*"

I would therefore respectfully advise our *eminent amateurs*, whilst exercising a wise economy in the construction of their horticultural buildings, to hold out liberal inducements to good and intelligent gardeners, and then the better class of them will no longer be advised by well-meaning friends, "not to go on a private place."

ACCELERATION OF THE GERMINATING PROCESS.

Translated from Staats Zeitung for Gardener's Monthly

BY T. S., BROOKLYN, N. Y.

The perceptible irritability of many plants by touching or shaking, finds a still more curious pendant in the susceptibility of plants for certain stimulants, which seem to work in precisely the same way as alcohol or opium does on the human body. Already in the last century, Barton made the observation that the stems of Tulips and Iris grew much quicker in water containing camphor, and resist decay longer, than in water alone. These experiments Prof. Vogel of Munich has renewed, and found true, for instance on elder in bloom. It is only necessary to dissolve powdered camphor in a bottle with water, through continued shaking, and with this weak solution even half-decayed branches can be brought to renewed freshness for a little time.

The process of plant life is known to be totally different from animal life. They take up carbonate and water, and form from these bodies, by

joining them with hydrogen, the organic substances, as ligneous fibre, starch, sugar, and white of egg, while they give out oxygen. The animal, on the contrary, inhales oxygen, burns by this help the food, and gives out as the product of this process hydrogen. This animal breathing process is not quite missing in plants, even if it is not so prominent in the exchange of the gasses by the feeding process, and herein, perhaps, lays the reason for the susceptibility in plants for stimulants; and if this be true, then it can be taken for granted that camphor would favor the germinating process, because the germinating seed inhales oxygen exactly like the animal, and gives out hydrogen. This supposition Prof. Vogel in his experiments found to be correct. He made the trial with seeds which had lost by age their germinating power nearly completely, and would not germinate, neither between damp paper nor in the ground. Those seeds treated with camphor-water showed favorable results in very short time, germinated in large numbers, and much quicker than quite fresh seeds under ordinary circumstances would have done.

A species of bean which needs eight to nine days in the usual way to show signs of life, develops itself already in three days. From a species of cucumber no seed would come up in the garden, but in camphor-water all of them germinated very quickly, and transplanted in the ground showed distinct signs of the stimulating power, through greater strength and freshness, and a more vivid green in the leaves.

Without any doubt the florist, as well as the farmer, may make use of these observations in many cases; particularly with long germinating costly seeds, the camphor-water may be used with advantage.

ORCHIDEÆ NO. 15.

BY JAMES TAPLIN, MANAGER TO GEO. SUCH, ESQ., SOUTH AMBOY, N. J.

Epidendrum vitellinum.—This is another Mexican species, which should be in every collection, being cheap, easily grown, and very free to flower. It also lasts from six weeks to two months in flower. The color is bright orange-scarlet and yellow. The flower-spikes are a great addition to a small glass of choice cut flowers.

The above plant will grow well either in baskets or pots, and also on blocks, if kept well supplied with water. It will do well in any greenhouse, with a slight shade during the summer, and also in winter, if kept moderately dry, and temperature never below 50°; but it should never get dust-dry, for, like many other orchideæs, it is making roots in the winter when the plant is comparatively at rest.

EDITORIAL.

THE VALUE OF POPULAR THEORIES.

One of the most interesting phases of our horticultural experience is to note that those who contend for certain principles as essential to good culture, rarely act on them. They are the D. D.'s, not the M. D.'s, of horticulture—the doctors who preach—not the doctors who practice. We have noted this before in regard to the preparation of orchards. Some writers contend for digging the soil up two feet deep; for underlaying it with tile every twenty-five or thirty feet; for sixty loads of stable manure to the acre; for clean surface culture and no crops—or at least a very light crop of roots between the trees. Thousands talk thus for every one who proves his faith by his works.

We see the same inconsistency in other departments of culture; and deep plowing gives us a similar illustration. Mr. Geo. E. Waring tells us in the January *American Agriculturist* that in theory he is a deep plowist. He is one of those few excellent people who believe in what they write and teach; so a few years ago he plowed up ten acres of land a little deeper than common, bringing up a few inches of poor cold clay. It took five years' expenditure of manure and labor —*equal to the original cost of the land*—to bring the crops up to the condition they where before the deep plowing was done. Still he holds to the deep plowing party, although he says he now hesitates about recommending its teachings for general and immediate adoption.

The most remarkable part of Mr. Waring's article is, however, where he gives his European

experience. One would suppose that there, if anywhere. what has been regarded by all good writers—that is those who contend for the "intellectual"—as indisputable. namely, the benefits of deep plowing. we should see it profitably practiced. But Mr. Waring says "the men who succeed the best there, as well as here, are shallow plowers rather than deep plowers." And yet Mr. Waring tells us that these men modestly admit that the deep plowing *theories* are the true ones, though they cannot make any money by them, nor can those who follow them.

The truth is we have been too long under the rule of mere theorists, who know little practically of what they write, but who have sufficient influence in the literary world to hold up to pretty general abuse any one who appeals to common practice as the soundest guide. Men of experience, as Mr. Waring tells us in the same article, "believe theoretically" what they will not dare to practice, simply because they cannot stand to be laughed at by men whom—as perhaps some of our Illinois friends would teach—they are to regard as their "superiors in scientific attainments."

For our part we have never undertaken any crusade against science. On the contrary, we believe we have done as much to encourage a love of science among the cultivators of the soil as any one. But we have never hesitated to abandon the most cherished theories of distinguished horticultural scientists whenever experience and observation have taught us they were wrong; and not only abandoned them, but have always felt it our duty to lay all the facts before our readers, regardless of any abuse which might follow, feeling as old Cobbett used to teach, that a grain of experience and observation is worth a whole ton of theories, however ingeniously constructed.

The season is now approaching when we want our readers to test an old theory as carefully and thoroughly as we have done, and if they do not agree with us afterwards, no matter. They will at least learn something by the experiment. One of the old and long cherished theories of fruit culturists is that trees will not do well without a constantly clean surface. It is conceded that trees will not thrive well when the temperature of the earth in the open ground is much above 70°. At 80° the system of the tree becomes weak, and renders the leaves susceptible to the attacts of various fungi and other diseases. And yet the experimenter will find in this region at least, that soil unprotected on the surface from the sun's rays will go over 90°, or 100°. It is very likely after this he will get tired of seeing the leaves of his pear trees fall off before midsummer has hardly gone, and go to protecting the surface in some way, yet believing probably that in "theory" at least the exposed, clean, sun roasted surface is the proper way, and the only right way to grow fruit trees.

He may live in a region where year after year young seedling pears drop their leaves so early in the season, that it is impossible to bud them; and he may have to abandon the business to northern men who "can grow pears." He may take a dozen or so of young seedlings, and pack them thoroughly through and about with brushwood, so that it is almost a struggle for the plant to push its way through. He will find the leaves green and healthy to the last, while those on the clear clean soil will long have lost theirs; and on testing the land under the brush with a thermometer, will find it about twenty degrees lower than in the other case. He may think after this that it will pay him to keep his soil cool in some way, though he may still not dare to dispute the theories of those who hold that a clear clean surface is the beginning and the end of all good culture.

This is the season of the year to think of these things. Let every one take his thermometer and try the difference between the shaded ground and the cleared ground, and the difference in health of trees in connection with the earth temperature, and he will be surprised how much he will learn. He may perhaps be laughed at as a "scientist" by some good easy going folks; but he can lay the whole blame of his folly on the *Gardener's Monthly*, who will cheerfully bear the ridicule for its dear reader's sake.

OBITUARY.

GEORGE GLENNY.—When most of the old gardeners of the present time were boys, George Glenny was the great authority on all the questions of practical gardening. His works were very popular. His *Gardener's Gazette* was the precurser of the *Gardener's Chronicle*, which, throwing so much more intellectuality into the field, afforded no show for mere plodding works. Of a somewhat combatative disposition, he neglected to temper his struggles with that distinction between the person and the thing, which is so essential to keep such a character out of hot water; and hence he had few associates,

and was generally left to serve horticulture alone in his own way; and in his own way he did serve it well, and his name will not soon be forgotten by his gardening friends. He died in May last, aged eighty-one.

MR. JOHN SALTER.—Most who now enjoy the improved Chrysanthemums of the past quarter of a century, do not know that they are indebted chiefly to the perseverance of the subject of this notice for the great pleasure. He was passionately fond of this plant, and devoted much time to their culture, and raising seedlings. He went originally from England to France, and settled at Versailles, from whence many of the first good Chrysanthemums came; but finding that a country of revolutions was unfavorable to gardening, he returned some twenty years ago, and established the Versailles Nursery near London, from which new Chrysanthemums continued to pour. He died early in May, at the age of seventy-six.

EDITORIAL NOTES.

DOMESTIC.

Failure of Wilson's Albany Seedling Strawberry.—We have samples sent us from three different locations, of Albany Seedlings, which after flowering profusely, did not set a berry. We have not seen any reference to this fact in any of our weekly exchanges, except the *Greely Tribune*, which notes a "failure" without indicating the kind. We should be glad to know how widely the failure extended, as in a variety which has *always* been our most reliable, the sudden giving out is remarkable. The first impression with those who remember the controversies of twenty years ago, would be, that the stamens had given out, and that the plant had become pistillate; but in one case that we had the opportunity of examining there were beds of Col. Wilder, Jucunda, and Triomphe de Gand, close by, from which it would have been readily fertilized. Moreover an examination of the faded flowers with a pocket lens indicated perfect stamens and pistils. It is evident that the old question of the sexes has nothing to do with this failure. There has been a quantity of the variety in the market, showing that the failure is not absolute. It is singular that other kinds have done remarkably well that do not generally bear a good character. The Jucunda above referred to, had never given the grower entire satisfaction; but this year is the best of the four named. President Wilder is also doing excellently well. So far as it goes, it shows the remarkable influence of special causes on special varieties, and is an argument against any one placing full faith on one kind. Several varieties should always be set out. We shall await further reports about the Wilson with much interest.

Joshua Hoopes.—In our notice we took occasion to say that Joshua Hoopes the deceased was not *Josiah* Hoopes, another excellent botanist of the same town. Our printer deliberately changed Josiah to *Joshua*. We had this corrected in the proof sheets, but he deliberately changed it again to *Joshua*, when, of course, we knew no more of it till the paper came out. He still insists that as Joshua was written in the other parts of the article, he was justified in having them all written alike! Our only comfort is, that few of our readers could have been misled by his extra smartness, as the context told what we intended. *The Helenium Hoopesii* was not, however, named by Dr. Gray after the subject of our notice, but for another Hoopes (West Chester fortunately abounds in them), and who, though with no botanical pretensions, was the means of first bringing Dr. Gray to the knowledge of it.

Carnivorous Plants.—The curious observations of Mr. Wm. Canby on the carnivorous instincts and practices of the *Dionœa muscipula*, or Venus Fly-trap, which we published in our tenth volume, have recently attracted considerable attention in connection with the general subject of insectivorous plants. A writer in the New York *Nation* has recently gone over the whole subject, which proves to have an enticing popular interest; and the *Nation's* article is being reproduced in Europe. Mr. Canby is one of the best observers of plant life in America, and the world would be the gainer by more frequent contributions from his modest but carefully accurate pen.

The Most Profitable Fruit.—Mr. Nicholas Ohmer, of Dayton, Ohio, is one of the most successful fruit growers of that region. Of quinces, pears and apples, he finds them profitable in the order named. His quince orchard we have repeatedly referred to in this magazine.

Dwarf Pears.—With the exception of the Duchess d'Angouleme, the western fruit growers seem to have generally abandoned all idea of dwarf pears for profit.

Early Bearing Pears.—In selecting pears it is well worth while to take kinds that come into bearing early in life. The Seckel is a long time before one can get any fruit from it. The Bartlett in this respect is very desirable, and the Beurre d'Anjou is like it. The Howell is also an excellent early bearing kind.

The Wiegela.—The introduction of the pure white Wiegela makes an era in the history of American shrubbery. It is so pure a white, flowers so free, and has such good foliage, that it will always be a favorite. Like the W. amabilis, it flowers freely in the fall. No one seems to know its history. It came to this country as Wiegela hortensis nivea, which means the snow white Wiegela of the garden. It may be a hybrid between Wiegela rosea and W. amabilis. It seems to partake of the character of both. It is strange that more use is not made of a variety of *W. amabilis* named W. Groenwegenii, which has been for some time in some nurseries, but has not yet got much beyond. The flowers are of a very deep rose, and are arranged in immense quantities along the strong stems of the preceding year. These arch over, and often have a length of five feet filled with flowers. It would be a capital thing to train up as standard, for single specimens on lawns, as is now being done with Wistarias.

Weeping Hawthorn.—The English Hawthorn does not do well in our warmer States. The bark gets "hide bound," and the whole plant soon falls a prey to parasitic fungi. The weeping variety is an extremely delicate and beautiful thing; but has never done much on the English Thorn stocks, on which it is imported. We have seen some which were grafted on the Crataegus grandiflora, which seems to do admirably for it. It is well always to plant them in cool soil, about which see editorial article.

The Virginia Creepers.—In traveling among gardens one is surprised that more use is not made of the Virginia Creeper. In most parts of the east it is indigenous, and we have even found it as far west as the Rocky Mountains. It gives one of the greatest of the charms to autumn scenery, for which America is so famous; but it is rarely used by landscape gardeners. It grows with immense rapidity, and it will soon cover old trees, rocks, or whatever it may be desired to clothe with beauty. It is highly valued in Europe. The Ampelopsis Veitchii, or perhaps more properly A. japonica, is a capital addition. The leaves are of a single leaflet, or at most in threes; and the whole growth is delicate. There are two beautiful climbing vines of this class—intermediate between this and the grape vine, also well deserving the attention of cultivators—the Cissus or Ampelopsis bipinnata; and the Vitis incisa. This last has the appearance of the common Virginia Creeper at first glance; but has but three leaflets, and these are almost as thick and waxy as the common Hoya or wax plant.

Boussingaultia Lachaumii.—"The *Gardener's Monthly* still remains a puzzle" to the *American Agriculturist*. It does not understand what we mean by the *Agriculturist* company; nor did the "Orange Judd company," in its list of wood cuts for sale, name the *Boussingaultia Lachaumii*. It is, moreover, intimated that the editor has nothing to do with business catalogues. But this business catalogue (see page 3, seventh line from bottom) *does* refer to *Boussingaultia variegata*, as having been given in the *Horticultural Annual*, 1870, page 15, of which we *believe* the editor of the *Agriculturist* was the editor; and we further *believe* that this "*Bonssingaultia variegata*" is the same as *Talinum patens*. The word "Lachaumii" is not in the catalogue; but this does not alter the fact that a *Talinum* has been named a *Boussingaultia* as *we believe*, which is the gist of the whole thing.

It is hardly to be expected, however, that one who thinks it worth while to discuss the difference between the mere expression of "Agriculturist company" and the "Orange Judd company," will be able to see the real point; and "this reminds us" of the indignant boy who, on being called a "nasty story teller," was abundantly satisfied when his antagonist explained that he had only said the other was an unlavitated perverter of the truth; as Josh Billings says, "the bearings of this observation lays in the application on it."

The *Agriculturist* protests it had no idea of abuse, but intended only a sort of innocent diversion at our expense. Surely we may be allowed to express our admiration of the joke in our own way.

One word in conclusion. "The editor of the *Amer. Agriculturist* is one of the most intelligent members of the fraternity, and one whom all may be proud, as we are, to reckon among their personal friends. But he has a habit of sneering at an occasional imperfection in the work of others, without considering that he has failings of his own. We remember a great many instances during the past year or two, when he

must have badly wounded the feelings of many of his fellow laborers who, in their field, were doing a work at least equal to that in his. Would it not be better to give good words to these patient workers? Perhaps there have been; and if so, it only shows how an unpleasant recollection lasts longer than the opposite.

We took this *Bouissingaultia* case to show him his own weakness, and in doing so have adopted his own style of criticism, and as near as we could his own language, so that he may have a view of it from the other side; and as in his last he acknowledges that it is "not pooty" as he expresses it, we are not without hopes of his reformation.

The Yucca as a Vegetable.—While watching the pushing flower shoots of Yucca filamentosa this spring, the thought occurred to try them as a vegetable; the plant being so closely allied to the asparagus that it must certainly be harmless. Only the suggestion of the superintendent that he wanted all for seed, saved a dozen or so from the kitchen. Since then we find the following in the *Greely Tribune*. We supposed the species referred to in the following extract was the *Yucca aloefolia*, as it seems to be represented in photographs of wild Arizona scenery; but by a notice of Dr. Parry, in Utah *Pomologist*, it is probably the Y. brevifolia. No doubt they are all eatable:

There are many plants growing in New Mexico and Arizona, which have strong fibres, that could be utilized for the manufacture of rope, paper, etc. One such species (*Yucca angustifolia*) is now utilized at Denver; but there are many more. The root of this plant is used by the natives as a substitute for soap, and is highly prized on account of its cleansing properties for woolen goods. Another plant of great interest is the *Maguey* or *Mescal*, growing in Southern Arizona—a peculiar species of Yucca. The plant consists of about eighty to one hundred lanceolate leaves, from two to three feet long, pointed to a sharp thorn at the end; all the developed leaves are concentrically united at the ground; those undeveloped (the heart of the plant) remain soft and perfectly white so long as the sunlight is kept away by surrounding outer leaves. The Indians bake this heart in coals for eight or ten hours, when it acquires an exceedingly sweet taste, much like honey. The Mexicans also prepare from this baked mescal an alcoholic beverage. The fact of this substance turning into sugar by simple heat, has no parallel in our experience.

The "Joshua" Plant.—The little known region of southern Utah and northern Arizona, is now being explored by Dr. C. C. Parry, to whom we are so much indebted for our knowledge of the Rocky Mountain Flora. The *Utah Pomologist* for May tells us that Dr. P. was actively engaged around St. George at that time. He had just returned from encamping among the "Joshuas," which he finds to be *Yucca brevifolia*. In a note to that enterprising little paper, which at one time we remember as having had its complete office *under a tree*, Dr. Parry says of that section:

It is now thirty years since Fremont, in returning from his adventurous trip to California, reached the valley of the Virgen. Here harassed by hostile Indian tribes, he passed hastily in the direction of Salt Lake, snatching here and there a native plant, to show something of the vegetation of this unknown district. Within the past twelve years Mormon enterprise and industry have pushed their settlements in this southern direction, and now the magical results are exhibited in cultivated fields and blooming gardens scattered over these hitherto desert wastes. What more particularly strikes the attention of the traveler visiting this region in early spring, is the profusion of blossoms which load every tree or bush, whether native or cultivated, which by their brilliant colors hide from view the less obtrusive green of the opening foliage. This striking fact is probably largely due to the prolonged period of vegetable activity, continued through a growing season extending from March to October, inclusive. This growth is opportunely checked by an excessive dryness of the summer atmosphere, by which the elaborated juices are concentrated, and store up for the succeeding season. Hence as soon as the reign of frost is over everything in the way of early vegetation is ready to start, and put on at once its brightest holiday garb to be followed later by the silent work of the transforming leaf, and the maturing of the highly elaborated fruit.

Art Against Nature.—Every gardener knows that his art at any time will beat the hand of nature. We see going the rounds of the papers, that a Mr. Dodson, in the vicinity of the Greenhorn Mountains, in Colorado, has produced, under the irrigating system in vogue there, seventy-five bushels of wheat to the acre. Unaided nature here in the east would never do any thing of this kind. The evidence that this was done seems conclusive.

Californian Calycanthus.—A correspondent of the *California Horticulturist* says that the Californian form of the Calycanthus is not so sweet scented as the eastern one in cultivation.

The Timber of the United States.—Professor Brewer, of the Sheffield Scientific School of Yale College, has astonished the meterologists of the old world who have been led to believe that the climate of the United States has been gradually changing through the awful destruction of its forests. He has written a letter to a distinguished European, in which he shows by figures that no such terrible destruction has been going on, and if there has been any change of climate, it must be from some other cause. He says that in the older settled portion of the Eastern States—New England and the Middle States—*one-third of the whole farming area* is still woodland, and that "if we extend our observations further to the south or to the west, the facts are still more striking."

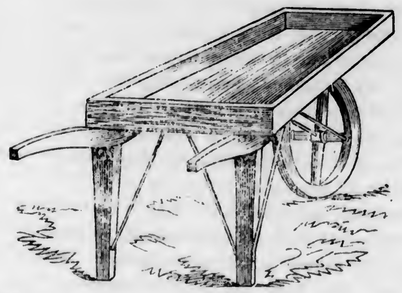
A Fine Hydrangea Otaksa.—Mr. Geo. Foust, florist of Philadelphia, had a plant of this variety of Hydrangea this year, which was four feet high, and the same broad, and with twenty of its enormous heads of flowers. It was a perfect show to see, and we suspect there is no finer specimen in this country.

FOREIGN.

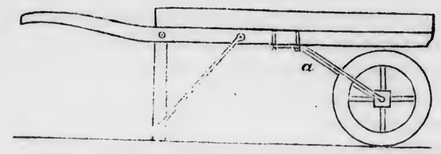
American Tuberoses.—A correspondent of the London *Gardener's Chronicle* says: "Italy at one time furnished England exclusively with these roots; but now America sends them in magnificent condition, both as to size and thorough ripeness. It would seem as if the latter country is remarkably adapted for its culture."

Frosts in European Vineyards.—English accounts represent terrible results from a May frost in European vineyards. The vines in all the lowlands of France and Germany are represented as looking like dried sticks, all the young shoots being completely destroyed. Some few saved theirs from destruction by making fires on the windward side, and the smoke is said to have saved them. Those on the elevated regions seem to have escaped. The report says two-thirds of the vines have had their branches, and of course the crop destroyed. The thermometer is said to have fallen two degrees below *zero*. This we suppose is Reaumur, which is our freezing point.

A Spring Barrow.—Most florists and gardeners are familiar with the old handbarrow for



carrying pots,—clumsy and awkward, and requiring two hands to carry it, because an ordinary wheelbarrow upsets and breaks pots—in short will not do at all. Our correspondent A. M. C. J. Coninck, who furnished to us the article on Gunnera scabra, contributes the following to the London *Gardener's Chronicle*, which is a great improvement on the old style, and will commend itself especially to our readers:



Cracking of Fruit.—Mr. William Early, in the *Florist and Pomologist*, takes the same ground in regard to the theory of M. Boussingault, on the cracking of fruits that we did when referring to M. Boussingault's experiments, which have attracted so much attention in some quarters. He gathered fruits, and after immersion they cracked. They absorbed more moisture than the skin could contain without bursting. Mr. E. shows—as we did—that this does not by any means cover all the phenomena of cracking. As we pointed out years ago, when the cuticle is prevented from growing by fungoid action, the fruit then cracks. There are *many* causes; and this explanation of Boussingault covers only a very limited field.

The Aroids as Vegetables.—At a recent meeting of the London Royal Horticultural Society Mr. Berkeley stated that a species of *Amorphophallus*, A. Berkeleyi, had its stems regularly on sale in the markets of India, cut into lengths as we do asparagus. Our own Indian turnip, *Arisæma triphylla*, is well known to have acrid roots when raw, but of excellent eating when cooked. It is closely allied to this East Indian plant.

Eucalyptus globulus manages to "struggle through in the open air in some of the southern countries of England in mild winters, though coming out in a miserable plight."

Akebia quinata, one of our hardiest vines, enduring perhaps thirty degrees below zero with us, seems always cultivated as a conservatory climber in England.

Gardening in Italy.—The *Gardener's Chronicle* says that gardeners and gardening, as an Englishman understands it, is rare in Italy.

SCRAPS AND QUERIES.

A Dangerous Enemy to the Hemlock Spruce.—*A. T. L.. South Haven, Mich.*, writes: "I send you by this mail a vial containing specimens of a borer that has attacked the hemlock forests of this State within the last two years, and which will, no doubt, cause (if they are the cause) their almost entire destruction within the next two years. These specimens were taken from bark after it was pulled from the tree, in the usual manner for market, showing that the the tree was not yet dead, nor their juices stopped circulating. If they had, the bark would not peel. The trees that are infested the worst yet keep their foliage; but the bark does not peel, and the sap has nearly stopped flowing. Is this other than the common borer that infests all dead, or nearly dead, timber? I believe it is the same chap, and that the reason of their attacking the timber as they do, is that the extreme drought of the past two seasons has so weakened the tree as to enable the borer to find a congenial field for operation in their trunks. To substantiate this theory is the fact that, on all low lands that did not dry out, the trees are healthy, and no borer could be found. They commence near the ground, and gradually spread over the entire tree. It is a sad blow, whatever the cause."

[Not being versed in larvæ, we handed the specimens to our good friend Rathvon, who furnishes the following note:]

The larva was dead, *dead*, DEAD; and no wonder, for instead of giving him bread, they had "given him a stone." I am only able to determine that it is a Buprestan, a family of "woodborers," allied near to the "hammer bugs," *Elateridæ*, and (inferentially) that it is probably an *Agrilus*, or a species allied to that genus.

About twenty-five years ago I had two correspondents engaged in the copper regions of Lake Superior, and they occasionally sent me collections of insects gathered on the beach of the Lake, the larger number of which were *Buprestidæ*, belonging to the genera *Stenurus*, *Chrysobothsis*, and *Agrilus*. These insects would fly out and fall into the Lake, and then were cast upon the beach by the returning waves in great numbers. I had also collections of the same from the shores of Lake Michigan. I therefore inferred that the insects must have been plentiful in the pines and hemlocks of that region; and if plentiful *then* they are probably still more plenti ul *now*. We have the same, and also allied species in our own region, one of which—the *Stenurus divaricata*—bores into the trunks and limbs of apple and pear trees. These borers differ from the Longicornia, in that they carry on their mining operations just under the bark, and have been very destructive to the pines of our Southern States, and, from the time immemorial, to the pine forests of Europe. Larvology, however, is yet in its infancy; it is, therefore, difficult to determine, specifically, what an insect is from the larva alone. Some weeks ago I obtained a larva from beneath the bark of an old locust post, which had the general appearance of the larvæ of an Elateridan, but it developed a Cistelan, a member of the great heteromerous family *Tenebrionidæ*, very far removed from the *Elateridæ*.

How the Swindlers Work.—The following correspondence has been placed in our hands. The writer is a prominent New York business man: "I am afraid the —— Street gentleman would not pay for the powder, far less the shot. I never had any dealings with him whatever, except *buying* a few articles that I was certain he could not deceive me in. I understand he owes leading firms here heavily for years, and that they can't get a cent. His reputation since ever I heard of him has been bad. It is quite a common trick of scallawags of that class to boldly refer to a known firm, and take the chances of the party to whom they apply, being too busy or too careless to inquire. A few years ago, one of this type started in New Jersey. I had known him as a private gardener, and credited him to the amount of one hundred dollars or so, which he promptly paid; he then got some one hundred and fifty dollars more, but leaving me with the impression favorable from his promptness in the first purchase, which was a well laid ruse, as results showed. On the strength of the good impression he had given me, he began a most extended purchasing of stock of all kinds from nurserymen within three hundred or four hundred miles, and invariably referred them to me. The first half dozen letters I replied to favorably, but by middle of March they began to come in at the rate of five and six a day, and so continued for nearly two weeks, which soon showed me the scamp's intention; and of course I stopped him then; but he judged wisely that quite a percentage would never inquire, and sent him the goods ordered The result was that he got over ten thousand dollars worth of stock, for which he never paid a cent but the freight. He dipped largely into you Pennsylvanians. I wish you would agitate the black list scheme again in the *Monthly;* it saved quite a number of us when we had it a few years ago, by a mutual showing up of the scamps that were preying upon us. There are now on my books, over a dozen or more such, who have left me, and are "patronizing" other victims.

[We should like to have any suggestions in regard to protective measures.—Ed. G. M.]

Walter Peach.—An Ohio correspondent desires information as to the comparative value of the Walter Peach. It is not grown in this vicinity, nor have we chanced to meet with it in any of our excursions.

Insect on the Grape Vine.—*A. O. W., St. Joseph, Mich.*, writes: "Enclosed I send specimens of brown scale found on a grape vine; they increase very fast on this one vine. Will they be likely to extend into our vineyards and injure them? If so, what is the proper cause to exterminate them? Some think it is the same that is injuring the vineyards in France."

[The insect in France and this country, which is so very injurious to the grape—the Phylloxera—feeds on the roots. This is simply one of the common forms of Coccus, and readily yields to whale oil soap, a solution of potash, or any of the common remedies. A mixture of soap and sulphur, painted over stems after pruning, would no doubt rid one entirely of the pest, or even lime wash colored with soot.]

California Ferns.—*Amateur, Bedford, Mass.*, sends us two beautiful Californian Ferns, the largest of which is the *Pellæa mucronata*,—the other he describes as a climbing species. There is a climbing one, *P. flexuosa*, which this one is not; and as there is but one of this character known, this may be new. We should be glad of specimens again, when the fruit is maturing. We are glad to find these beautiful western Ferns getting into cultivation.

Hardiness of the Cape Jasmine.—*A. R., Sacramento, Cal.*, inquires if Gardenias will stand six degrees below the freezing point, to which the thermometer sometimes falls in Sacramento. We believe it might get through that without serious injury, but should be glad if some of our Southern readers will inform us positively.

Crickets in Greenhouses.—*F., Plattsmouth, Neb.*, asks: "Would you please to inform me, through the columns of the *Gardener's Monthly*, as to the best way of killing crickets, as we have tried arsenic mixed with sugar, in small pans, set about in the greenhouses, and it does not seem to shrink them at all."

[We have had no experience with these pests; have any of our readers? Powdered borax drives away cockroaches in greenhouses; but crickets are "something else."]

Bigonia capreolata.—*D. & B., Todd Co., Ky.*, send us for name flowers of the above; the plants growing wild near them. It is a beautiful hardy evergreen, and well worthy of extensive culture. It was the subject of a sketch from the writer's pen for Downing's *Horticulturist* near twenty-five years ago; and that it is not now everywhere grown, leads us to doubt that the "pen is mightier than the sword."

Gold Edged Currant.—*J. T., Quincy, Ky.*, writes: "I enclose you two leaves of a golden variegated currant of my own production. The currant is white—a seedling of the white grape. If you see anything in this worthy of notice, please give us your opinion of it in the *Gardener's Monthly*. All we ask is your candid opinion if worthy of a notice or opinion. I think if the bush was properly trained it would be quite ornamental; and the fruit is probably equal to the white grape."

[Variegated leaves in stripes or blotches are not unusual among seedling currants, giving a a rather sickly effect. This one has a gold line, about as thick as coarse thread, following the exact outline of the leaf. It is pretty, but scarcely enough of the gold to contrast with so much green. It would be well to save seed

of this, and try and widen this gold border. It would then be a grand thing.]

FUCHSIAS.—*C. B.* says: "The first Fuchsia was introduced into England from Chili in 1788, and was called Fuchsia coccinea. There are about thirty species of this plant wild, all natives of the American Continent but one, named F. excorticata, which is a native of New Zealand, and was introduced into England in 1824. The first Hybrid Fuchsia having a *white* tube and sepals, and purple corolla, was raised about the year 1845 by Mr. Cripps, a nurseryman of Tunbridgewells, England. The plant was called Venus Victrix." The first Hybrid Fuchsias of any kind were raised by the writer of this in 1841-2, and the best named St. Clare. The following year Mr. Standish raised Standishii.

DOUBLE SYRINGA.—*J. H. S., Troy, O.*, says: "I send you by mail to-day a few flowers of Syringa, from a seedling bush, on which a part of the flowers inclines to be double. I have another bush, on which all the flowers are double, and nearly twice the size of the ones I send. But owing to its having been taken up in the fall, and not receiving good care, it did not bloom this Spring, or I would have sent some of the flowers. The flowers are sweet scented. Do you think it would be any improvement on the old one? If it is worth mentioning, I should like to hear of it through the *Gardener's Monthly*."

[The double Mock-orange—Philadelphus coronarius—is often met with, as the tendency to turn its stamens into petals is easily encouraged. If it would stay this way it would perhaps be more valued; but its weak point is too great a disposition to run back to the single state]

SPIRÆA CHÆMEDRYFOLIA is the name of a shrub well worthy of culture, to which W. T., of Painsville, Ohio, refers—"I send you this day by mail a branch and flowers of a Spiræa, which please name in next number of *Gardener's Monthly*."

MARQUIS OF LORNE CUCUMBER.—A Pennsylvania correspondent, who forces cucumbers for winter and spring use, writes that he grew the past season the "Marquis of Lorne" cucumber 32 and 33 inches long, and would like to know if any one can beat that. He adds that he "did not obtain his seed from the celebrated seed house of this or that," and he wonders "how any respectable firms can sleep easy under such slavering." We do not suppose they do. It is not their fault, but the editors', whose kindly feelings allow their better judgment to be overcome in passing these "slaverings" over.

TRIOMPHE DE GAND STRAWBERRY.—A Delaware County, Penna., correspondent sends us a "nameless" strawberry for name; and adds, that it has "beat all other strawberries he knows of about his vicinity." It is but Triomphe de Gand.

VARIEGATED TREES.—*W. S. Carpenter, West Chester, New York*, obligingly furnishes us with the following notes: "I notice in your editorial remarks, in last number of the *Gardener's Monthly* that the variegated maple is not reliable, the white in the leaf burning out, etc. I enclose a leaf taken from a tree which I have had some ten years, and is now about ten feet high, and six in diameter; very close and compact; perfect in every respect; never burning or changing color; a perfect bouquet the whole season. I enclose a leaf of a new Ash, which pleases me very much. I think it is finer than the Maple. The foliage is nearly pure golden—not burning or changing; quite a gem, I think. I also enclose a specimen of the Spoon-leaf Mulberry, which may not be new to you. I have several new shrubs which please me. You are familiar with them, no doubt. One is Acasia (?) Nemu. It is an elegant tree. Quercus concordia proves hardy, and is a very fine golden leaf tree."

ULMUS RACEMOSA.—A Long Island friend inquires about the merits of this tree for ornamental purposes. We have never known it in cultivation. We have seen it growing wild along the banks of the Maumee, in north eastern Indiana, and think it is as beautiful as any of the Elms. But almost all these plants look so different under culture, that we would like to have the experience of others who have grown it in gardens.

THE PEACH APHIS.—The end of May we received from Mr. Kerr, of Denton, Md., specimens of the Peach Aphis, which has been more than usually destructive in that region this year. Its close ally, the Cherry Aphis, often plagues the northern cherry grower. Many a "block" has been rendered worthless by its ravages. We have never known the Peach species to be so destructive as it is now; and it is not probable it will occur again in so severe a form. In greenhouses, smoke is found destructive to them. If it could be applied to a nursery row, it might do good there also.

BOOKS, CATALOGUES, ETC.

SIXTH ANNUAL REPORT on the noxious, beneficial and other insects of the State of Missouri: By C. V. Riley, State Entomologist.—The State of Missouri places all other States of this Union under obligation to her, for the good judgment which governs her in the matter of this branch of science. It is not only that she is well aware of the immense importance of a knowledge of the natural sciences to a thorough development of the resources of a State, but that she has the good sense to select for her representative in this especial branch one so thoroughly fitted for the position as Mr. Riley, whom the whole scientific world respects. The result is not only an annual piece of work which does the State credit, but which also makes it an essential part of every good scientific library in the world. While many official "reports" speedily find their way to the paper mills, these increase in pecuniary value with age; and if the state—as sometimes happens in legislatures where the members are not as well informed as they might be—should ever regret the few thousands spent on Mr Riley's labors, they can easily get all the money back with compound interest, by putting a few thousand of reserved copies on the market, after the lapse of a few years. There are, in this volume, exhaustive treatises on the Codling Moth, Colorado Potato Beetle, Cotton Worm, Canker Worm, and a very full one in regard to the grape root louse or Phylloxera, besides accounts of other grape insects. The chapter on the Ham Beetle will be worth thousands of dollars to the provision trade, and of course to everybody interested in cheap food. The new discovery of the past year is that the Raspberry is liable to the attacks of a borer, somewhat allied to the peach borer. This he has named *Ægeria rubi*. Mr. A. S. Fuller, and Chas. Parry, of Cinnaminson, New Jersey, seem to have been mainly instrumental in aiding Mr. Riley to work it up.

It is deplorable, perhaps, to be continually learning how terribly we are surrounded by insect pests; but it is a consolation to learn at the same time of new friends. We all suffer more or less from the common white grub—here Mr. Riley figures and gives an account of the "Unadorned Tiphia"—*Tiphia inornata*, which destroys innumerable quantities of these grubs annually. The Yucca Moth also receives attention; with numerous other insects.

CATALOGUE OF P. H. FOSTER, BABYLON, LONG ISLAND, N. Y.—Mr. Foster pays especial attention to new fruits, of which a complete list is given in this catalogue. Rare trees and shrubs in great quantities are also offered. The catalogue also has a highly complimentary notice of the *Gardener's Monthly*, for which the publisher desires to extend his best thanks.

THE AMERICAN FLORIST.—We have before us the first number of a small quarto serial under the above name, from Toledo, Ohio. It is a small quarto, and devoted to every department of gardening. The editor is G. T. Willotson.

THE POMONE, OR VAN HOUTTE'S POMONE—In the last number of the *Gardener's Monthly* G. W. W. asks where the above work can be obobtained. By enclosing per mail, a bill of exchange on Paris, France, for ten shillings sterling to Louis Van Houtte, of Ghent, Belgium, it will be sent to his address. It is published in French and English, in two parts, as a long quarto; 9 inches long by 14 inches wide, and contains short descriptions of 437 varieties of pears. There are fine plates, each containing ten well executed colored specimens of fruits, also many outlines.

An advertisement in Van Houtte's Pomone

states that it can be had of Chas. H. Marot, Philadelphia.

TRANSACTIONS OF THE AMERICAN POMOLOGICAL SOCIETY, 1873.—The quarter centennial, under the presidency of M. P. Wilder, at Boston, is an event which will long be remembered by those who participated, and which this volume happily commemorates. Some of the essays, written for this volume, were not read at the meeting, and were thus not at the command of the general public, but were taken from the charge of the publication committee in some way, and then published. This was hardly fair to those who took the trouble to write essays for the purpose of introducing a topic for discussion. or else that the printed Proceedings might be fresh; but we will suppose it was thoughtlessly done. Some of the reports intended for the meeting were not written; and as there was no time for these oral effusions, they do not of course appear. The reports of discussions are taken apparently from the daily newspapers of Boston, in which we noted at the time numerous errors, as we happened to have our own full notes for comparison. These errors are continued Some of these errors will be detected by the intelligent reader as he goes along, although he may not always have a clear idea of what was really meant.

We have to speak of these defects in justice to the subject, and yet it is only to be wondered at that there were not more. The meeting "accepted the resignation" of its former Secretary, and had no new one ready to put into his place except nominally. Some one had to be temporarily supplied. The gentleman who kindly volunteered for the emergency, was probably the very best who could have been had; but the best in the world, unexpectedly called to such a position, and with other plans consequently disarranged, could not be expected to make a perfect work. Whatever imperfections there may be in the report before us, should not, therefore, be chargeable to the honored President, or the excellent Secretary *pro tem.*, but to the meeting itself. which, in the language of common life, had been induced to "cut off its nose to spite its face." Although some of the most striking of the papers *not* read at the meeting, in some curious way found publication, and much of the other matter simply taken from the daily papers,—there is a considerable amount of fresh matter which has been reserved for publication by Mr. P. Barry, in response to circulars sent out by him. These are from all parts of the United States, and present an excellent conspectus of the fruit condition of the Union. The corrected fruit catalogue is also given. These and other features make it on the whole, we think, the most useful volume ever issued. The Wilder medals are represented as a frontispiece. No competition will hereafter be allowed, but these will be awarded for any thing meritorious that may further the cause of horticulture, whether it be collections of fruits, valuable essays on some subject entirely new, or any thing which may have a marked influence on the progress of fruit culture.

We cannot close this sketch without a word for the good President, who has so successfully piloted, so to speak, this good old vessel through so many troubled waters. The Society is doing a world of good; but few know, except those intimately acquainted with its workings, how much there is to do which he does, and how well he does it; nor should Vice-President Barry be forgotten. His work is hardly second to that of the President's. The Chicago people, where the meeting is to be held this coming fall a year, no doubt well understand this; and will accord these good old veterans and their co-workers, a reception they little dream of.

CULTIVATION OF TIMBER AND THE PRESERVATION OF FORESTS. Congressional report No. 259.

THE INFLUENCE OF FORESTS UPON RAINFALL AND INUNDATIONS: By M. F. Vallers, Translated for the war department by Major C. J. Allen, United States Army.

These two documents, issued by the United States Government, ought to be studied together by those who wish to form an unprejudiced opinion. The former is chiefly a "memorial from the American Association," signed by Dr. Franklin B. Hough and Dr. Geo. B. Emerson, who profess to have consulted the following gentlemen in making up their report:

Franklin B. Hough, Lowville, N. Y.; George B. Emerson, Boston, Mass.; Prof. Asa Gray, Harvard University, Cambridge, Mass.; Prof. J. D. Whitney, State Geologist, California, Cambridge Mass.; Prof. J. S. Newberry, School of Mines, New York City; Hon. Lewis H. Morgan, Rochester. N. Y.; Col. Whittlesy, Cleveland Ohio; Prof. William H. Brewer. Yale College, New Haven, Conn; and Prof. E. W. Hilgard, University of Michigan, Ann Arbor Mich.

Usually men of science are very careful to take in both sides of the question. These gentlemen on this occasion seem to have taken the position of a lawyer who feels it is duty to make out a case only for his client. Statements which have not only been questioned, but which have been disproved, are still classed among the "facts," seemingly because they are likely to help the client's cause before a jury who know no better. Works which contain statements supposed to aid in the cause are culled; and though other statements refuting the former ones. are often side by side, they are evidently unnoticed. Yet surely in a question of science, they should have some weight. Once in a while the reader is suffered to know that there is another side. Barely this, and nothing more. For instance at page 24, he is told that "M. Valles published a remarkable work contradicting the efficacy of reforesting as a means of preventing inundations." What M. Valles said is not given; but what M. A. F. d'Hericourt says about M. Valles' views is fully given, and the opinion expressed that he "combats these *assertions* in a victorious manner." Reading M. Valles' work one will be surprised to find how few "assertions" there are, and how strong are his facts. He shows for instance from *actual figures* from 1778 to 1817 that in a considerable region of country, of which Paris is the centre, that there has been a gradual clearing off of timber; but the quantity of rain has steadily increased, and it has been better distributed—that is, there has been more rainy days in proportion to the amount of rainfall. The whole work is indeed full of these *figures* and *facts*, taken from a great number of locations. The other side brings some figures and facts from other places. There seems to be some favoring their side as well as some favoring the side of M. Valles. What is the conclusion that any unprejudiced man would arrive at in such a conflict of evidence? Simply that there is no relation of the supposed cause to the effect. The Committee of the American Association also quote a large number of honored names who favor their views. M. Valles quotes others equally strong, among these M. Arago, one who made these matters a life-long study, and whose opinion, to say nothing of any of his facts, every one values. This eminent man, after reviewing the facts adduced, says of them, "they do not go far to sustain the opinion that wooded countries are those in which it rains most."

However, our object is to call attention to these two works together. Those who wish to arrive at the truth should study both, and then form their own opinions. M. Valles offers no opinions, but sums up at the end of his work what his facts amount to. In his own pointed words, they prove that in the districts from which he took his figures, "there has been more rain annually, less flood water, more cleared land." What the other side offers to prove is well known.

Our readers do not fear to face the truth in this matter whatever it may be. They know that the world cannot get along without timber; and that in proportion as it becomes scarce, will the inducements to take care of it increase. That time has already come. Railroads and others, interested in the timber question, are already planting; and nurserymen all over the country are filling orders for timber trees. This interest will, from now henceforth, be a valuable and a growing one. It will be to its true interest to have it grow on a sound substantial basis. If people suffer themselves to be led into heavy investments on the strength of visionary schemes, which any ingenious thinker will demolish in a few hours, they will not at least have the *Gardener's Monthly* to blame for their fate.

CANADIAN ENTOMOLOGIST.—We have on our table Nos. 4 and 5 of this excellent serial now in its sixth year. Entomology is now becoming a leading study, as, independent of its mere scientific attractions, the importance of the knowledge in the practical details of culture, draw many whom, perhaps, the mere knowledge for its own sake would not perhaps. These numbers have two good papers by a young Philadelphia scientist, Mr. Thos. G. Gentry, of great value. One shows that caterpillars partake measurably of the colors of the leaves on which they feed. This will be noted as having a great bearing on the natural selection theory of Mr. Darwin, where the color of certain insects is thought to be in a measure assumed as a protection from enemies. The other article shows how in some ants the parental love is so strong as to cause a wholesale destruction of the young rather than that they should be made the slaves of other ants. The whole subject of entomology is so intimately bound up with horticulture, and those intellectual pleasures, which give zest to moral life, that serials like this are particularly sought for now.

NEW AND RARE FRUITS.

YATES AND RED WARRIOR APPLES.—R. J. B., in the June *Monthly*, inquires as to the identity of the above apples. The Yates is the true name, and so far as I know it is often grown at the South as Red Warrior. There is not, to my knowledge, any distinct fruit under the name of Red Warrior, but the Nickajack is occasionally grown by that name. The description of Downing, page 328, is, of course, incorrect. The Yates is valuable for the amateur and house use, but too small for a profitable market fruit in the large Northern cities. C. D.

FROGMORE EARLY BIGGAREAU CHERRY.—The London *Florist and Pomologist* has a beautiful colored plate of this new cherry. Biggareau class of cherries are not particularly early, and thus one may be valuable in this respect. It is also of first class flavor, according to the *F.* and *P.* As it appears in the plate it is very tempting; rather above the medium size, of a pearly amber, and highly colored next the skin.

BIGGAREAU NOIR DU SCHMIDT, or Schmidt's Black Cherry, is figured and described with the above. It is a large deep black variety.

NEW AND RARE PLANTS.

THE WEEPING LOCUST, AND BLOOD-LEAVED WEEPING BEECH.—*Mr. Butterton, of Hammonton, N. J.*, writes: "Weeping Locust (Bugoti pendula) which is, I presume, the subject referred to by your correspondent in last number, has been grown by me for eight years, a period in which there has been several trying seasons of heat as well as cold—notably so, '71 and '72 when not a twig of this lovely tree (for it is not excelled by any in the whole race of weepers) received the least injury; and as my place is located only about twenty miles south-east of Philadelphia, concluded it would be found hardy in that vicinity. The new Weeping Blood-leaved Beech is also in my possession, and promises well, being of a free habit of growth, holding its foliage well to a late season without change of color, in this respect better than some of the older more generally known members of this family."

A NEW GENUS OF CONIFERÆ—PSEUDO-TSUGA DAVIDIANA, OF BERTRAND.—M. Carriere, in the *Revue Horticole* of last year, figures and describes this plant under the above name. Its habit is described as similar to Abies, but the cones "recall in their scales, the Pinus strobus in form, nature and dimensions." Only a single individual tree was found by Abbe David in China, near Pekin. The figure from the *Revue Horticole* is republished in the *Florist and Pomologist*. Young plants are growing in France.

NEW TEA ROSE—MADAME FRANCOIS JANIN.—The *Florist and Pomologist* says this new rose has been freely exhibited the past season, and promises to be exceedingly popular for cutting. The bud is described as beautiful, and deep yellow in color.

BLOOD-LEAVED BIRCH.—There is now a Blood-leaved Birch as well as Blood-leaved Beech, in English gardens. This is a good addition to our list of choice trees. Nothing so well relieves the continuous green of our summer garden scenes as blood-leaved trees.

THE BLOOD-LEAVED JAPANESE MAPLES seem to be slowly extending in English gardens. They have been found very hard to propagate extensively. They are the grandest of all blood-leaved plants; and the few that have been tested show them to be admirably adapted to the American climate. It is probable that it will be many years before they are common.

NEW ROSE—GENERAL VON MOLTKE.—This new hybrid perpetual rose is advertised in England as the only real scarlet yet known.

THLADIANTHA DUBIA.—Under this name the following advertisement appears in an English paper:

This fast-growing hardy climber is suitable for covering wire-arches or trellis-work, for running up poles in vacant places in shrubbery, or on decayed trees. throws a profusion of yellow flowers from July to the end of September, and tubers very rapidly.

This plant is a native of the north of China, and we have never heard of its being in cultivation before. It belongs to the cucumber family of plants, and its "fast growing" proclivities and "yellow flowers," will be suggestive of some gourd.

MRS. HALIBURTON, NEW PINK BEDDING GERANIUMS.—So many new varieties of Geraniums appear every year that are nearly worthless, that one has to look to the character of the florist who sends out a variety as one of its best recommendations. It takes a wide experience to know whether a variety is novel, and honesty to send out only such. Kinghorn is one of the most reputable of English improvers and commercial florists; and he says this is the best pink bedder out.

HYBRID AQUILEGIAS.—The Rocky Mountain Columbine *Aquilegia cœrulea*, in the hands of Messrs. Hoopes Bros., & Thomas, has been crossed with the European A. vulgaris, and the American A. canadensis, and a large number of beautiful forms and colors have resulted. We hope these gentlemen will persevere with their experiments. The Aquilegias are well adapted to out-door border culture, and they may be rendered as popular as the Phlox. Now that the golden long spurred columbine, A. chrysantha, and the yellow short spurred A. flavescens have been introduced, some more mixtures may be effected.

ROSE MADAME LACHARME.—Another rose that has also been shown in beautiful form is Madame Lacharme. Mr. Bennett showed a plant of it several weeks ago with two or three splendid blooms on it, but they were pinky in the centre. Mr. George Paul has subsequently shown a cut bloom, and it is quite white; and I believe it is generally understood that in the open ground at the natural season this rose comes a good pure color. I fear, however, that its somewhat thin petal will cause it to be a bad weather rose.—*Gardener's Chronicle.*

ROSE DUCHESS OF EDINBURGH.—The *Gardener's Chronicle* says: Mr. Bennett has also shown a very fine new H. P. of his own raising (Duchess of Edinburgh), which has taken, and very deservedly, a First-class Certificate. I am informed that it is the result of crossing Marguerite de St. Amand with Baroness Rothchild, and certainly the rose does not in its appearance belie this origin. The flower is rather like the pollen parent in outline and color, but the wood is more robust and stubby, and in this respect it more resembles the mother parent. The flowers, too, do not lop over in all directions, as those of Marguerite de St. Amand are apt to do, but stand stiff and erect on the flower-stalks. Some of the back petals recurve, as is the case with La France, giving, in my opinion, though I am aware many good rosarians do not agree with me, a very pretty finish to the flower. Upon the whole, I think Mr. Bennett's rose may be set down as A 1, and one of the very few really first-rate roses raised in this country. I think it right to add that the First-class Certificate was awarded after an inspection by the Floral Committee of either three or four dozen, I forget which, cut blooms sent up at the same time.

FOREIGN INTELLIGENCE.

OMPHALODES VERNA.—A correspondent of the London *Journal of Horticulture* thus writes of this very pretty, but very old hardy herbaceous plant: "This fine old plant has been a favorite with me from boyhood, and I was glad to see Mr. Record's notice of it. It is worthy of his highest praise, for many are its merits. It requires no special culture, thriving in ordinary soil equally out in the full bright sunshine or under the shade of trees. Once planted there is very little danger of losing it, for its spreading habit, and the freedom with which its offsetts or

side growths are produced, have procured for it the title of the Creeping Forget-me-not, small plants becoming clumps a foot or more in diameter in a couple of years. Such a lovely plant is in its right place wherever flowers will grow. It is one of the best of early flowering plants for the rock garden. It proves an admirable associate for the Lily of the Valley under the shade of overhanging branches along the sides of wild wilderness walks, the intense blue trusses of the Omphalodes and the pure white Lily bells forming together such a bouquet as will bear the palm from the choicest exotics. Clumps of it, too, tell well in vacant spaces among shrubs or to fringe the margins of Rhododendrons. In the spring garden it is equally effective, but it is found to answer best for mixed beds, its flowers usually fading by the end of April. Another especial merit must not be overlooked, and that is the facility with which it may be forced into flower in the depth of winter, and thus again be brought into contact with the Lily of the Valley in the conservatory "

EARLY WHITE GRAPES.—The earliest variety in ripening with me is the Early Malvasia, or Early Keinzheim of the Horticultural Society. It is a luscious, sweet, little white Grape, which ripens in the end of August, followed by other early white sorts, such as Early Malingre, Early Smyrna Frontignan, Chasselas Vibert, Early Saumur Frontignan, and Royal Muscadine or Chasselas de Fontainebleau of the French.—W. T., in *Garden*.

THE PEAR PARADISE STOCK.—The name of the Pear Paradise will strike most people as being something novel in fruit-culture. What has been wanted so long is a stock of the same nature as the Pear, which would effect the same results upon it as the Apple Paradise does upon the Apple, and this has been to some extent obtained by M. Miro, of Meaux, near Paris. He says in a communication sent to a French contemporary:

"In a course of arboriculture which M. Baudinat and I gave in the garden of M. Messager, member of the Horticultural Society of Meaux, after speaking of the effects of various stocks on different fruit trees, some of our audience remarked on the ingenuity of making a Pear Paradise stock. I made no pretence of having found a Paradise, but a sort of intermediate, which shall be the subject of this communication. The suckers of the Pear stock grow less vigorously than the parent, and are therefore in this respect between the Pear and the Quince. They make excellent pyramids, and fruit quickly, and they have the advantage over the Quince of prospering in all soils by reason of their rooting near the surface.

"In 1863 I bought two hundred plants of suckers, which I planted in my garden. I grafted almost all in July of the same year. I made a plantation of them in very bad dry soil, despairing of the success of this plantation. Since that time till 1871 I had not seen these trees, when I was agreeably surprised at their moderate vegetation, which was very green and less strong than the trees on the Pear stock, and they were so heavily laden with fruit as to require to be thinned. This proved to me that stocks from suckers of the Pear are well adapted to make garden trees, while trees on the Pear stock are only fit for orchards."

This is an experiment which any one can try. Procure in autumn, when the leaves have fallen, a number of suckers from small sized Pear trees in an orchard or garden. Choose those that appear to be the most delicate growers. Run them out in lines, and when established graft them with any kinds of Pears which are desired, and no doubt the result will be equally satisfactory as M. Miro found his experiment to be.—*Journal of Horticulture*.

THE NAPOLEON FLOWER.—A Kew correspondent of *Journal of Horticulture* says: "In the house No. 1 is in flower the Napoleon imperialis, named after the first Emperior Napoleon. It would be desirable if only for the glossy evergreen foliage, but when studded with its maroon and cream-colored flowers is at once curious and beautiful. Each flower somewhat resembles a Rafflesia in miniature, and I do not think it too fanciful to compare it with Sea Anemones. The flowers are borne on the old as well as the young wood, and as there are buds in different stages, it will remain in flower some time. The structure is very anomalous and curious, and from the absence of good material was long a puzzle to botanists. With the genus Asteranthos, not in cultivation, it was constituted the order Napoleoneæ, which is now placed in the order Myrtaceæ as a sub-tribe in the "Genera Plantarum." It requires the usual stove treatment, with the lowest winter temperature—about 55° Fah.

SPIRÆA JAPONICA.—This is one of the most beautiful of all forcing plants for spring flowering, but it is something more than that; it blooms freely when planted out in a warm sandy border, and is extremely pretty. It is largely grown both in Holland and Belgium for forcing, and its roots are imported into this country about this time of the year in large quantities. It is only within these last few years that it has attracted attention, but even in that short period it is grown by the thousand by many of our London market growers and florists. In habit it is very compact, and in fresh greenness of color it is unrivalled. Its flowers, which are multitudinous, are individually small, white, and born on erect branched spikes. Out of doors it succeeds in any sandy border in the south of England, and will be found a nice addition to ordinary herbaceous plants. When required for forcing, pot the roots, which are in clumps, directly they are received, in sandy loam and leaf-mould.—*The Garden*.

[It is, perhaps, well to remark that this is the same plant as those which are often referred to as Astilbe japonica, and Hotea japonica.—ED. G. M.]

INDIA-RUBBER TREES IN UPPER BURMAH.—The estimated number of trees (says Captain Stover, in the *Chemical News*), which are chiefly situated in the Bhamo and Mogoung districts, is 400,000. They thrive best in damp moist soil, and in thick forests, shady and cool. The trees attain to a height of from 50 to 100 cubits, being from 15 to twenty-five cubits in girth at the base (full-grown trees), and with roots creeping over the ground for some distance. They are fit for tapping when from six to ten years of age, at which time they are from 15 to 20 cubits in height and 3 cubits in girth. When the time of tapping arrives, incisions are made in the trunks of the trees and in the roots above ground. Hollow Bamboo cups, about 1½ feet in length, sloped and pointed similar to a prepared pen, are then inserted in the incisions, and receive the oozing juice or milk. Three or four hundred of these Bamboo receptacles are inserted in each tree. The tapping is continued for about a month, after which time it is discontinued, and the wounds allowed to heal. At the expiration of another month the trees have regained strength, and tapping is recommenced. In preparing the India-rubber, the following rude method is observed:—Water is boiled in large iron pans, and the juice of the tree is thrown in, when it gradually thickens, and subsequently is dried. The India-rubber so obtained is being brought into local use for covering water-buckets, baskets, and boxes as a substitute for dammer. The existence of the India-rubber tree in Upper Burmah does not appear to have been known, or, at any rate, it did not attract attention, until somewhat recently, when three Europeans, Messrs. Miller, Marshall, and Henri, who were employed at the jade stone mines, were forced to look and search about in the forests for a substance that would effectually repair a diving apparatus that they used in working for jade stone. They found India-rubber, and repaired the apparatus. The existence and value of the juice was then brought to the notice of the king, and Mr. Henri is now employed in tapping the trees and preparing the juice. Upper Burmah could produce 200 or 300 tons of this useful substance per annum.

HORTICULTURAL NOTICES.

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.

We have received part first of a new series of publications by the Massachusetts Horticultural Society, which we regard as among its most valuable ones, and hope it will be continued.

As a sample of its contents we give the following in regard to the bark of trees:

"The president mentioned an article in the '*Gardener's Monthly*,' in which the benefit of scraping trees was asserted, and a suggestion that this operation would probably have a good effect in preventing the cracking of the White Doyenne pear, was regarded as probably correct. He called on Robert Manning for his views in regard to the subject.

"Mr. Manning said he desired first to correct the statement in the '*Gardener's Monthly*,' that a committee of the Massachusetts Horticultural Society asserted that much good resulted from

scraping the rough bark from fruit trees. He was under the impression that the report of the committee was to the contrary effect, and on referring to it he found his impression correct. In regard to the benefit of scraping trees, his views agreed with those of the committee rather than those of the '*Gardener's Monthly*.' The roughness of the bark was the natural effect of age. and was seen in the healthiest trees. It might be prematurely produced, but in this case scraping it off would no more reach the cause of the trouble than scraping off the postules from a man's face would cure him of small-pox. The remedy must go deeper. The difference between the roughness of the bark caused by age in a vigorous tree and that produced prematurely by neglect was well known to experienced orchardists, though difficult to describe. In the former case the scales would be large and part more freely from the under portion; in the latter, they would be small, indurated, and cling closely to the bark beneath. The remedy is to renew the vigor of the tree by good cultivation and liberal manuring. The wash used many years since by the late Capt. Lovett, of clay, cow-dung, ashes, and sulphur, was spoken of as preferable to lime-wash. Mr. Manning mentioned instances where the bark of trees which presented a soft, green, healthy appearance, had, when exposed to the sun by cutting off the limbs, to graft them become browned and hardened on the southerly side. He thought this indicated the benefit of protection from the sun, and he thought the rough bark such a natural protector. In regard to the prevention of cracking he was doubtful of the effect to be produced by scraping, as fruit frequently cracked on young trees with the smoothest and healthiest bark, and he had known perfect specimens of the White Doyenne and other varieties liable to crack produced on old, rough-barked trees.

"Mr. Hovey said that trees in gardens are in an artificial condition, and may be benefitted by scraping, but like pruning it should not be done without limitation. He said that trees were often injured by scraping too severely, or "to the quick," and instanced the case of the orchards of the late Benjamin V. French, where the growth of the trees was checked or entirely stopped for a year or two by a very severe scraping, and washing with rather strong lime-wash. Mr. Hovey had had the rough bark scraped from his trees twice. He believed that the cause of the cracking of fruit was the absorption of water, and that scraping was not the remedy.

"Mr. Manning said that he did not understand the '*Gardener's Monthly*' as advocating the scraping of trees 'to the quick.'

"Harvey Davis, chairman of the Fruit Committee, in answer to the president, said that age increases the looseness of the outer bark, and that in fifteen years' experience he did not think his trees needed scraping, nor that it would have any effect in preventing cracking of the fruit. When he wished to produce such pears as would take the first prize, he had watered freely in dry weather. Mulching might answer to some extent as a substitute, but he thought the leaves and branches need watering as much as the root. He thought a slight scraping of the loose bark of old trees might be beneficial; but would not recommend deep scraping.

"Benjamin G. Smith felt glad that Mr. Davis had let out the secret of how to produce such fruit as would take first prizes, as he had a weakness for them himself. In the early days of his fruit culture he enquired of an experienced neighbor as to his views on scraping trees, and was answered that an abundant supply of barnyard manure was the best scraping.

"Marshall P. Wilder concurred in the views of Messrs. Hovey and Davis that scraping trees would not prevent the fruit from cracking. Trees under careful culture will not become prematurely rough and mossy. Neglected, or planted too closely, especially in undrained soils, they become mossy, and should be washed, say once in five years, with a pound of potash to a pailful of water, and a little cow-dung and clay, the latter partly to show what trees have been washed. They should also be lightly scraped. In a good soil there is no need of scraping till they grow as old as Mr. Davis has described."

In regard to the White Doyenne Pear our friends seem to have mistaken us. We have had no experience in this. It was a correspondent of the *Country Gentleman*, who gave his experience in that way; and we simply referred to his experience as an incident in the question. The researches of modern science also show that rough bark is not "a natural protector"—has indeed no more to do with protection than the "scales of the small-pox." We should revert to these matters much oftener than we do, but are afraid our readers would think, in a practical work like ours, we introduced too much "science."

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HINTS FOR AUGUST.

FLOWER GARDEN AND PLEASURE GROUND.

Did any of our readers ever hear that the shade of one tree was cooler than another? We have, and have laughed at the notion, but intend to be more respectful in future. Here, as we sit at eventide, after our hard day's work is done, watching the deepening crimson of the clouds, as in the far west the sun goes down; and the cool breeze, sweetened by clover blossoms, comes sweeping up under the maple trees before the cottage door; sure well are we that there is no tree which, in such sultry times as these, would secure us an air like this. And yet the Maple—the Silver Maple is but a common tree. "Only a few Maples," is the apology of the improver when he begins to talk of more trees to plant. He has these, but is ashamed of them. There is about them none of the blooming beauty of the Horse Chestnut; and in simple majesty the Linden, or scores of other trees, would put them all to shame. Even among its own kindred it stands out a sort of Cinderella despised by its own sisters, and with none to say for it a word. The Norway and Sycamore pride themselves on their dense dark heads,—the spring pays homage to the youthful beauty of the Red species,—and the lovely yellow and scarlet of the Sugar, cause boundless admiration in the fall tide of the year. The Silver Maple has none of these things. Its early spring flowers are no more than bursting-bud scales. There is no particular beauty in leaves or branches; and when every thing in autumn more or less clothes itself in some gay color for the harvest festival, it simply bides its time, and sends its leaves unpretentiously to rest. But it has its sterling virtues. It grows with great rapidity; asks no favors at the hands of skillful gardeners; but is ready to grow anywhere at the wish of the rich or the poor, the unlearned or the learned; and we will add with a grateful shade, which, as the store keeper says of his substantial goods, defies competition. We cannot afford to do without trees like these. We like the mental part of gardening. We love to hear trees and flowers talk, and to ponder over their wise sayings; but here in the dog days, with every thing parched and burning up about us, we think none the less of gardening that it brings to us comforts for the body as well as food for the mind. It must be confessed, however, that the Silver Maple is too large a grower to be a good street tree in closely built-up districts; but where there is room for it to spread its rapid growing branches, there is none that will prove more acceptable on the whole.

We should like to see our landscape gardeners pay more attention to this idea of summer shade than they do. It is not so much shade, as it is breezy coolness that is desirable. Many a plantation of trees and shrubs is so arranged as to *look* remarkably well. The mental effort is a complete success; and yet the "air" is shut out, and close sultryness prevails. A few hints of this kind at this season of the year, will be timely, as people can look about them and see where improvements of this desirable character can be well brought in.

The planting season will soon come around, and now is the time to look about and select the

desirable kinds, and to decide on the proper places to set them.

The latter end of August is one of the best seasons of the year to transplant evergreens. The young growth of the past season has got pretty well hardened, so as to permit of but very little evaporation—and the earth being warm, new roots push with great rapidity, and the tree becomes established in the ground before cool autumn winds begin. The chief difficulty is that the soil is usually very dry, which prevents much speed with the operation; and the weather being usually very warm, the trees have to be set again in the ground almost as fast as they are taken up; so that it is not safe to bring them from a distance. It is as well, therefore, to make all ready in anticipation of a rain, when no time may be lost in having the work pushed through. Should a spell of dry weather ensue, which in September and October is very likely, one good watering should be given, sufficient to soak well through the soil and well about the roots. A basin should be made to keep the water from running away from the spot, and to assist its soaking in. After being well watered, the loose soil should be drawn in lightly over the watered soil, which will then aid in preventing the water from drying out soon again.

As soon in the fall as bulbs can be obtained, they should be planted—though this will not generally be the case till October; but it is as well to bear in mind that the earlier they are planted, the finer they will flower.

Towards the end of the month, and in September, evergreen hedges should receive their last pruning till the next summer. Last spring, and in the summer, when a strong growth required it, the hedge has been severely pruned towards the apex of the cone-like form in which it has been trained, and the base has been suffered to grow any way it pleases. Now that, in turn, has come under the shears, so far as to get it into regular shape and form. It will not be forgotten that, to be very successful with evergreen hedges, they ought to have a growth at the base of at least four feet in diameter.

Ground work around new country homes will soon be in order. In preparing the grounds, it should be remembered that grass and trees are not only required to grow therein, but that they must *grow well*. The top soil of the lot is often covered by the soil from the excavations, trusting to heavy manuring to promote fertility. But this is a too slow and expensive process. The top surface soil should, in all cases, be saved, and replaced over the baser soil. Also, where it is necessary to lower a piece of ground, the top soil should be saved to place over again. The depth of the soil is an important matter, both for the trees and the lawn. It should be at least eighteen inches deep. In shallow soils grass will burn out under a few days of hot sun. In a soil eighteen inches deep a lawn will be green in the driest weather. For the sake of the trees, also, the ground should be not only deep, but rich. If from thirty to forty loads of stable manure to the acre could be appropriated, it would be money well spent. Life is too short for it to be an object to wait too long for trees to grow, and planting large ones is an expensive, as well as an unsatisfactory business. A tree in a rich and deep soil will grow as much in one year as in five in a poor one. So in preparing a lawn, it is fortunate that, while aiming at the best effects, we are helping our trees also. It is generally best to sow for a lawn than to sod, where much of it has to be done. The edges of the road must, of course, be sodded, the balance neatly raked over and sown. The best kind of grass to be employed in seeding is a disputed point, and it will, no doubt, depend in a great measure on the locality. Philadelphia and northward, the perennial rye grass is excellent. It commences to grow very early, and has a peculiar lively, shining green. South of Philadelphia it is very liable to get burned out in summer, and the Kentucky blue grass would be much better. It is much the best to have but one kind of grass for a lawn, provided it is suited to the locality. A mixture of kinds is apt to give a spotted and variegated character, not at all pleasing. Some people like to see white clover growing thickly in a lawn and others object to any thing but green. However, if a good grass rake is employed freely in summer time, the heads of these flowers may be kept from expanding. Where there is a prospect of a month of growing weather, lawns may still be sown with grass seed,—the clover, where used, to be kept for sowing in April or March next. A small quantity of rye should be thinly sown with the grass, which, by the shade it affords will prevent the grass from being thrown out by the frost. The rye must of course, be closely cut in the spring, to allow the grass to get ahead of it.

FRUIT GARDEN.

In old times, when dancing had not become so wicked as now, we used to hear the boys talk of tying ropes to peoples' feet in order to learn them the various steps. We do not know that any one really ever succeeded in getting through the Terpischorean art in this way, but we think it quite likely, if there is any virtue in the "calendars of operations" which we sometimes read. These are so minute that no persons ought possibly to go wrong any more than the young dancer with the string tied to his foot. Yet it is a very simple way of getting over one's monthly work at calendar making, and we are often tempted to follow it. For instance we might tell our readers that August is the month when apples, pears, grapes and peaches ripen, and now therefore will be the time to walk in among the trees, and pluck and eat the ripest and the best. But we are unfortunately bothered with a set of readers who will not be satisfied with this simple food, and we have to look about for a better literary dish than this for them.

After all there is not much to be done in the fruit garden in August, except the care required in looking after the gathering and preserving of fruit. Our readers of course know that bruising fruit rots them, and that they must be carefully handled in gathering if they are to be kept for a time. Any injury from insects is as bad, and such injured fruit should be sorted, and kept aside for first use. Summer and early autumn pears and apples are best gathered before they are quite ripe, and kept in the coolest place possible. This, and the time that is coming, will also be the season for testing varieties, and deciding what are best for one's climate or soil. One must, however, guard against error in seeing that the trees are perfectly healthy. If a tree is sick, or if the parts of a tree have not their healthy development, the fruit will not get its natural flavor. It is on account of failure to perceive this that many excellent varieties get bad names. If the leaves fall early in the season as they do often with leaf-blight, or if the leaves are eaten off by caterpillars, red spider, or suffer in any way, the fruit will assuredly be of inferior flavor. Many do not care about the leaves falling early, and some even regard it with favor, as showing that the wood is ripening, they say; but this is a mistake. The healthiest trees are those which grow right on up to frost, provided that it is not a *second growth*. We fancy that when people speak of injury from late growths, it is late second growths, and these are bad, for then the wood often gets killed in the winter following.

A little trimming is useful to most trees at this season. The Blackberry and Raspberry may have their tops shortened so as to leave the canes about four feet. Some do this earlier in the season, but the buds are apt to burst if done too soon. In like manner, pear and apple trees that grow well, but produce no fruit, are benefitted by having, say half of some of the young growth cut back. The buds then left are very likely to form flower buds, in place of growth buds for next season. Many take out the old shoots of raspberry and blackberry after they have done bearing, and we have in times past recommended it ourselves; but on further observation, we see very little good, if not positive injury. The partial shade the old stems make seems rather beneficial than otherwise under our hot suns. Frequently the sun shining on the hot ground, seems particulary favorable to fungoid development The lower leaves then fall before the wood is ripe, when it dies in the winter, and is *not hardy*.

VEGETABLE GARDEN.

As soon as your vegetable crops are past kitchen use, clear them out. Never suffer them to seed. In the first place, a seed crop exhausts the soil more than two crops taken off in an edible condition; in the next place, the refuse of the kitchen is likely to produce degenerate stocks. Good seed saving is a special art by itself, always claiming the earliest and best to ensure a perfect stock.

Celery will require earthing up as it grows, to get it to blanch well. It is not well, however, to commence too early, as earthing up tends, in a slight degree, to weaken the growth of the plants. Take care, also, not to let the soil get into the heart in earthing, or the crown is apt to rot.

As fast as Endive is desired for salad, it should be blanched. Matting thrown over is the best for this purpose, as the plants are not so liable to rot as when pots or boards are employed.

In cold or mountainous regions, Melons are hastened in the ripening process, and improved in flavor, by a piece of tile being placed under the fruit.

Keep weeds from your compost heaps, as they

exhaust the soil, and bear seeds for future browsweatenings.

Sow Lettuce for Fall crop, thinly, and in deep and very rich ground.

Early Valentine Beans may still be sown early in the month. The soil for a late crop should be well trenched, or if the fall be dry, they will be stringy and tough.

Cucumbers, Squash, and other similar plants, often suffer from drought at this season. Cold water does not help them much, but a mulching of half-rotten leaves strengthens them considerably.

Cut down straggling herbs, and they will make new heads for next season.

Towards the end of the month, a sowing of Spinach may be made in a rich soil, which will come in for use before winter. That desired for winter and early spring use, is usually sown in September in this region. A few Turnips may also be sown for an early crop, but will be hot and stringy unless the soil is very rich.

Corn Salad is often sowed at the end of this month. It does not do so well in damp soil or low situation.

COMMUNICATIONS.

NATURAL INARCHING.

BY H. GRIFFING, HAZEL DELL, ILLS.

In the *Gardener's Monthly* for May, page 152, I notice T. T. S.'s article on natural Inarching, and your comments thereon. Until about six years ago there stood about one hundred rods from my present dwelling a Jack Oak, or rather two, at the ground, about six inches in diameter, some four feet apart, and joined together, about six feet from the ground, with only one trunk from there up.

Some ten years ago, in passing through Vigo County, Indiana, I observed the stumps of a white Elm, cut off about 8 feet from the ground, and about 2 feet above the crotch. The stumps stood about 2 feet apart, and were each over a foot in diameter.

HOW I FUMIGATE.

BY SEWALL FISHER, FRAMINGHAM, MASS.

The necessity of frequent fumigation with tobacco in all plant houses, to destroy the greenfly, and the crude method I used when I first commenced the care of a greenhouse, as well as the frequent remark which I hear, that it is a "great job," leads me to give my present plan for this purpose.

I use tobacco stems, the refuse of the cigar makers, which I prepare by chopping with an axe. My fumigator is simply an old milk pan, or equivalent, with holes cut in the bottom to secure a draft; set on three pots to raise it from the ground. I used one of these for every 300 or 400 feet of ground surface. I place a small handful of shavings in the middle of the pan, and after it has got well to burning, cover it with *dry* tobacco, using three or four handfuls. I then cover with *green leaves*, saving the trimmings of plants for this purpose. I also grow Tradescantia under the benches, to be sure of a supply. This prevents the tobacco from blazing. The whole process takes but a few minutes time, and I am not obliged to breathe the smoke to any extent. I have had no trouble in keeping clear of insects, since I adopted this method. Sometimes I use a *little* sulphur, sprinkled on the tobacco before covering, to prevent mildew and red spider, and seldom have to fumigate more than once a week, if I am regular about it.

I hope these hints may prove of service to some, who now dread the process, and are tempted to delay till the insects get the upper hand.

SUCCULENTS.

BY W. T. HARDING, AGRICULTURAL COLLEGE, COLUMBUS, OHIO.

Who ever has the good fortune to be personally acquainted with Prof. C. S. Sargent, of Brookline, Mass., will readily understand how he with his refined and cultivated taste, would be delighted with Kew Gardens. He is just the man to enjoy so rare a treat. No one could better understand or appreciate the beauties of nature and the wonders of the vegetable kingdom than he. And probably no where else could such a vast accumulation of Flora's jewels be seen as there. Only fancy him passing among the floral treasures examining and admiring the varied and wonderful collections of plants, trees, and shrubs, gathered from all parts of the earth, until he finds himself in "the Succulent House, 200 feet long, by 40 wide." (See, March number of *Monthly*.) With a lively imagination how concisely he describes "the effect you get on opening the door of this house is the most wonderful I ever experienced."

Several years have elapsed since the writer paid a visit to "Imperial Kew;" and yet remembers many a pleasant association connected therewith. Especially do I retain a vivid recollection of those strange prodigies of nature, Cacti, Agaves, and their alliances. The members which compose the eccentric family of succulents are peculiar indeed, and will arrest attention when ever seen. They are mostly of abnormal and singular formation. Some species are really funny little things: while others are monstrous in form, and massive in bulk. The thoughtful mind is led to reflect how fearfully and wonderfully made are we, and how marvellous is Nature in her operations. I have often seen the wonder-struck observer pause when examining the curiosity of the workmanship of nature, and exclaim, "good gracious!"

Most of the readers have heard of and may have seen, the beauty of the Night blooming Cereus, C. grandiflorus, and many have inhaled its delicious aroma, (or something like it) according to *the odorous* Phalon. Nothing floral can possibly excel some of them in loveliness. Their flowers are truly gorgeous. What more beautiful object can be imagined to delight the eye of an enthusiastic admirer of plants, amateur or professional, than the sight of a good specimen plant of the well known Epiphyllum speciosissima in full bloom? The dazzling splendor of the noble crimson corollas, in which are centred a rich profusion of bright silvery thread-like stamens, is magnificently grand.

Succulents are better adapted for window gardening, for the house or parlor, than foliaged plants generally are. The dry atmosphere of a dwelling house is not so injurious to them, but is rather congenial than otherwise.

At one time I believe I had under my care, (in a house purposely built for them) one of the most complete collections of Succulents in the United States; they were a never failing source of interest, wonder and admiration to all who saw them. In Europe, they are better known than here, and are considered indispensible in assisting to form a peculiar feature, characteristic of the sub-tropical garden in the summer season. It will be so here before long, especially if men of good sense and means, like Prof. Sargent, will only show what can be done with them.

And now for a little gratuitous advertising, for the good of whom it may concern, including Mrs. H. G. P., who inquires in the April number of the *Monthly* where she can get a Cactus. At Thomas Meehan's, Germantown, Philadelphia; R. Buist's of the same city, and John Cadness, of Flushing; where I procured most of the plants with which the Cactus House I allude to, was furnished. The greatest variety, I received from Mr. Meehan.

MESSRS. HOVEY & CO.'S COLLECTION OF PEARS.

BY C. M. HOVEY, BOSTON, MASS.

Your brief notice of our collection of pears in a recent number attracted my attention, and I was much gratified at your remarks. The very short time at your command, at the period of your visit, limited you to seeing but a portion of the trees, and deprived us of much of the anticipated pleasure of your company, as we desired to show you many particulars in relation to their growth and treatment.

Your recent letter to us, enclosing the inquiry of a correspondent at the South, was duly received, and we occupy a few spare moments to answer as briefly as possible both yours and his inquiries. You say a "correspondent inquires how old are the pear trees referred to in my traveling notes? I suppose about thirty years, but I should be obliged by the exact age, and any other particulars which you might think would interest, if agreeable to you."

To go into a full account of our entire collection I fear would fill too much space, and be a repetition of what I had in past years written upon the subject; but as your readers may know nothing of that, I gladly give you pretty nearly the information you ask. And here I may say your supposition in regard to the age of the oldest tree was pretty near right, viz: thirty years.

We began our collection of trees in the autumn or

1841, our object being the study of the nomenclature rather than any other purpose, the fruit being altogether of a secondary nature. At that time our ground had just been reclaimed from an old pasture, and we had but a small portion suitably prepar d for trees. About one huudred trees were planted in the Spring and Autumn of 1842, and from one hundred to two hundred every year, as the ground was ready, up to 1855, since which time only few trees have been planted to take the place of those which gave out.

Our grounds are laid out in squares, measuring about 150 feet on the sides, and the walks separating these squares are just 8 feet wide. Upon each side of these walks—though but one part of our grounds—borders were prepared 6 feet wide, by simply half trenching, and the trees were set out in a single file in the centre, just 3 feet from the edge of the walk, and 6 feet from centre to centre of each tree, giving about twenty-five trees to each border. These borders number about seventy, and are planted with about 1800 pear trees. The entire walks between the trees would extend, in a straight line, a distance of over one and a half miles. Such was the style and formation of our plantation.

Of course our object being to study the trees, and test every known variety, they were planted as thickly as possible on account of space, and as many upon the quince stock as we could get, supposing, at that time, that one pear would grow as well on the quince as another. Up to 1844 we had planted every variety to be found in the United States, and many from abroad; but in the autumn of that year we visited the English and French nurseries, and selected every variety that could be obtained. M. Jamin of Paris assisted us in securing as many as possible. These were all planted in nursery rows, ready for removal as soon as the ground was prepared; but many of them remained four or five years before removal, subject all the time to pruning and pinching, to make them perfect pyramids.

From the commencement of planting, another object was to show the perfection of pyramidal training, and up to 1854 this was kept up, every good tree branching to the ground, perfect in symmetry and form,—a magnificent show indeed—but all show—no fruit, except those on the quince. Ten long years of care and labor gave us but a slight opportunity to test the fruit. In th emeantime tree after tree on the quince had given out, and their places been filled with others. We had then learned that but few varieties of pears will succeed on the quince, and we gave up that stock for every variety not already proved or reported to succeed, making the further provision in all future planting to have the quince stock every alternate tree, so that the rows might be somewhat uniform in appearance. We had, at that time, probably some 1500 varieties of pears. A year or two more of care and labor we thought would bring about the brilliant prospect of bountiful crops, but alas! they failed to come,—more than half of our trees were varieties which would not grow on the ground: many of the latter had already fruited and died, and their places been filled with duplicates or new kinds. What should be done with the others?

Long reflection and close observation told us the pyramid was too slow and labor too dear for us Americans. If we would have fruit we must stop the constant heading and pinching in, but rather prune up, and acting upon our corrections, we decided to let the trees "alone." Away they went, apparently as happy as a bird loosed from its cage, and as if thankful for the brief respite from the knife. Their long branches had scarcely more than a year's growth, before they were actually weighed down with fruit. We had a little less of symmetry, but a deal more of satisfaction. Our first real crop was obtained in 1862, since which period it has varied from year to year, constantly increasing, and in 1873 measuring 2200 bushels.

As we have stated we have fruited since 1842 more than 1500 varieties, probably 2000. More than one-half of our trees have been grafted over, so that our collection is reduced to some 300 varieties. Thirty trees of Glout Morceau, Beurre d'Aremberg, Easter Beurre and others, we re-grafted last month. Most of these have been described and figured in the *Magazine of Horticulture*, to which I can refer any of your correspondents who wish the entire history of the collection, formed in the first place expressly and solely to establish a correct nomenclature, and to give to the collections of the entire country all the information possible to be obtained by a long, patient and careful study of the trees, their growth, habits, and qualities, by which they might be guided in the selection of future plantations. The Fruits of America also contains beautiful representations of all the finest varieties, and complete descriptions made from the study of these trees.

We might add that the trees are slightly enriched every autumn, and the ground lightly dug every spring; that every two or three years some of the longest branches are shortened in, to prevent them from becoming too thickly crowded, and that no other care has been given them the last ten years. A full account of the entire product of our pear trees from 1862 to 1874 was given in Tilton's Magazine.

This somewhat brief and hurried statement will, I trust, not be without some value to all interested in pear culture.

[An Atlanta, Ga., correspondent recently asked us to give a fuller account of Mr. Hovey's pear orchard, if possible, than our brief traveling recollections contained. We sent the request to Mr. Hovey, who very kindly responds as above. —Ed. G. M.]

THE CONSTRUCTION OF GLASSHOUSES.

BY W. C. STRONG, PRESIDENT MASSACHUSETTS HORTICULTURAL SOCIETY.

The *products* of our glasshouses are *expected* to be of a flowery character, but the process of *construction*, and the management of these houses, are of a most practical nature; and I shall endeavor to be direct and *practical* in my statements.

Briefly let me call attention to the admirable *adaptedness* of glass to the purpose required. It is so transparent that when the sun's rays shine upon a sheet at right angles, only 2½ per cent. of the rays are intercepted by the glass, 97½ per cent. of the light and heat passing through unimpaired. It is cheap, it is very durable, its brittleness being more than counterbalanced on fixed roofs, by the fact that it does not rot. It is one of the most perfect non-conductors of heat, and for this reason it is possible, in a clear crisp winter's night, when the breath goes up as incense, and "the owl, for all his feathers is a-cold," to separate and exclude this Arctic frost from a tropical luxuriance of vegetation by a thin sheet of glass of the thickness of a 1-16 of an inch. By so small space we pass from the poles to the tropics. This is what *glass* can do for us. Well may we study how we can best use it. In the brief space allowed in your valuable *Monthly*, it will only be possible to allude to a few general rules, and to advocate certain forms.

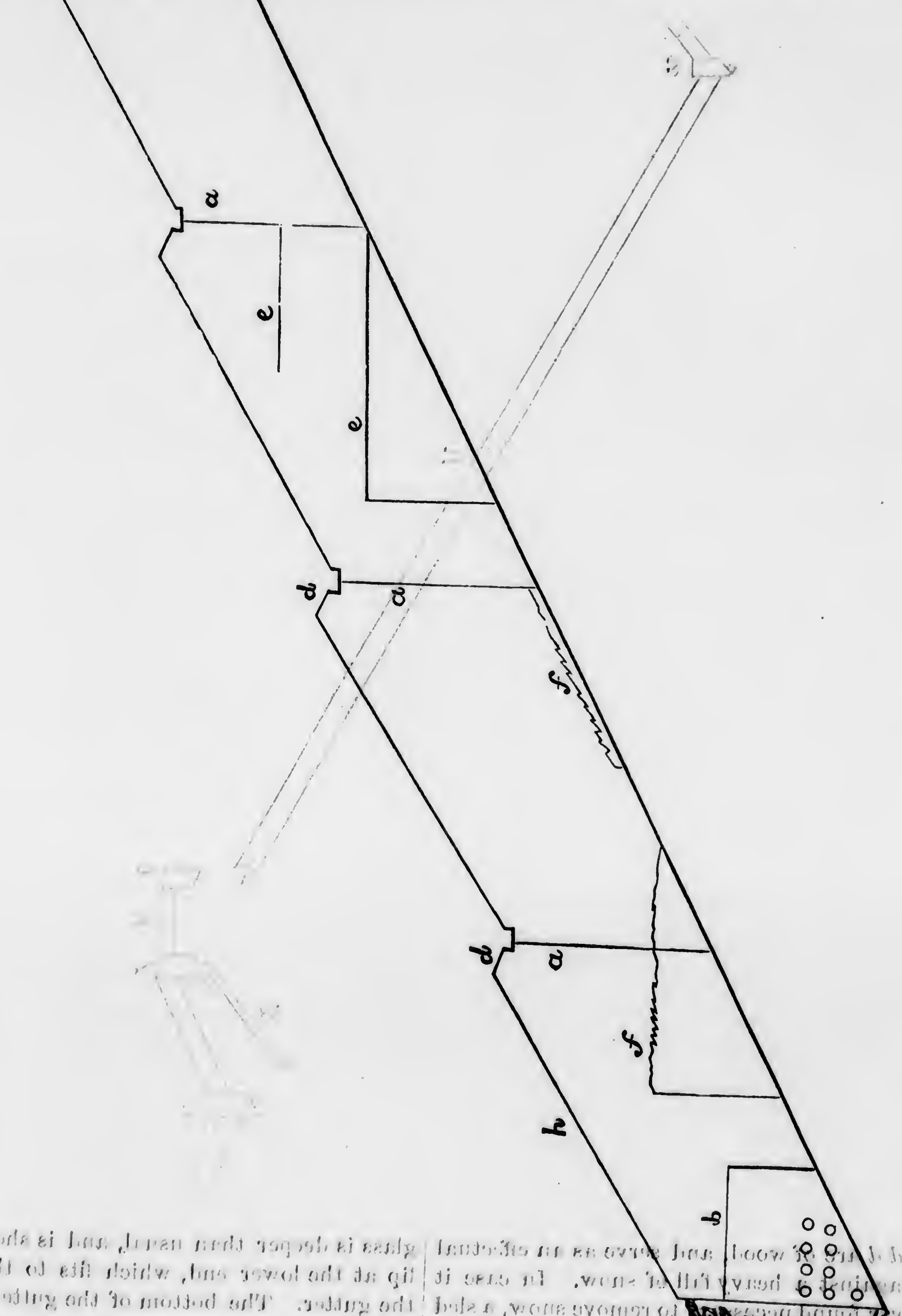
To commence with the most common and lowest form of glass structure, the frames and sashes, we find the frame well adapted for the winter protection of many tender plants; also for the late fall and early spring culture of cold blooded vegetables and plants, such as lettuce, radishes, violets, and other plants which require a cool temperature and nearness to the glass. The advantages of the frame consist in the economy of construction, the nearness of the plants to the glass, and the small space required to be heated, *all* of which can be used for plant culture, inasmuch as walks and head-room are not provided. These advantages are sufficiently important to warrant the continued use of frames for certain purposes, such as winter protection and early spring market gardening. For *winter growth*, frames are very unsatisfactory, even for vegetables. First, the sashes are so nearly horizontal, that when the sun runs low, its rays must strike the glass very obliquely. Consequently a very material percentage of the sun's rays is deflected, causing an average loss of one-third to one-half of the light and heat, varying according to the pitch of the sash. This is a material loss, especially at the season of shortest days and severest cold. Then the difficulty of getting access to the crops in severe weather is almost an insuperable objection. The cost of lifting and managing the sashes, for the purpose of access, of ventilation and of watering, is also serious. The ordinary method of heating by fermenting material, of which horse manure is by far the most available, is yet expensive,—insufficient to meet the exigencies of winter, and is very unsatisfactory in its results. Though the heat of fermenting manure is most genial at certain stages, yet it is of necessity fluctuating, and may fail at the most critical time; it involves a great amount of labor and considerable loss of material, and on the whole must be regarded as a most expensive method of heating during the winter months. In permanent frames a single hot-water pipe running along the front would be far more satisfactory. Some crops, like the Lily of the Valley and Neapolitan violets, might be successfully and economically forced in this way, even in mid-winter. But the tendency is, and will continue to be, in the direction of permanent houses, which shall be accessible from within, even for this class of plants.

Ascending in the scale we come to the ridge and furrow style of houses, which, though not new, has but recently come into very general use. They are now so well known that a description is unnecessary. It has been a common

method to construct them of sashes 6 feet in length, and providing for ventilation by merely raising, or tilting as many sashes as may be found necessary. This method is much more expensive, and it is by no means as tight as a fixed roof with simple sash-bars. For this reason sashes are not to be recommended, except in case of crops which require full exposure to the air. It is apparent at a glance that this form has many excellencies. The entire expanse of glass, however large it may be, is yet divided into small sections about 10 feet wide, thus avoiding the arid and chilly drafts which are found in large houses. The heat in these low and separate compartments is humid, genial and uniform. The plants are near to the glass, accessible with the utmost ease, and the head-room is obtained with economy of space at the apex of the ridge. The houses are designed to be low, the ridge not being in any case more than 7 feet above the ground surface. It is evident that there is economy in the construction of a compact block of houses with but four outside walls, however extended the range may be. A still more important advantage results, that but four sides are exposed to the cold; the intermediate sections are flanked by a tropical, rather than an arctic temperature. Different opinions are expressed as to the true position of these houses, whether the ridges should run east and west, or north or south. The question can be answered only by determining the use to which the houses are put. For the vigorous winter growth of plants there can be no doubt that a nearly south-east slope of the roof is most desirable. As was before stated, but a very small per centage of the sun's light and heat is intercepted or deflected when the ray impinges at nearly a right angle. The loss continues to be trifling as the ray departs from a perpendicular, and the angle with the plane of the glass becomes more acute, and is only about 4 per cent. when the angle is 45° with the glass. But the loss increases at a rapid rate as the angle becomes more acute. Hence it seems clear in theory, and it has been found true in practice, that a roof looking the sun full in the face during the short days of winter, will produce the most vigorous growth for all plants requiring light and heat. Where only a moderate growth in winter is required, as for example. for the storage and propagation of bedding plants, which it is desirable to advance most rapidly in the spring months, the north and south line for the ridge is most desirable, since the morning and evening rays are very favorable, and the mid-day rays, although considerably deflected, are sufficiently strong for the desired purposes. But for forcing work I am convinced that the roof should face southerly. And hence I think it equally clear that the ridge and furrow style is not adapted to forcing. Only one-half of the roof at best can face the south; the other half is exposed to the north winds, and cannot have the benefit of the sun. I am told that in houses thus situated and used for the growth of lettuce, nearly double the time is required for maturing the crop on the north bed that is necessary for the south bed.

We may then conclude that for most purposes for which this style is suited, a north and south line for the ridge is best, and that such houses are well suited for the propagation and gradual advance of plants, also for the culture of all plants which do not require the direct and strong rays of the sun. To such uses, in my opinion they should be limited. Where growth, or the developing of fruits or flowers is desired, full exposure to the sun and a protected position are essential. It is a common observation that a protected hill-side, sloping south, is an entirely different climate from the north side of the hill. No amount of coal can be an equivalent for the life-giving warmth of the sun. I have constructed a form of houses, which may be called the hill-side or terrace style, and which is admirably adapted for such positions. Indeed I regard the advantages of such a position, combined with the economy of construction and management of the houses, to be so great that they should come into general use for winter gardening. A description of this form has already been published in the *Monthly*, but since a few changes have been made, and experience has been gained, I will venture to give another description, in the hope that others may find it for their advantage to adopt this plan.

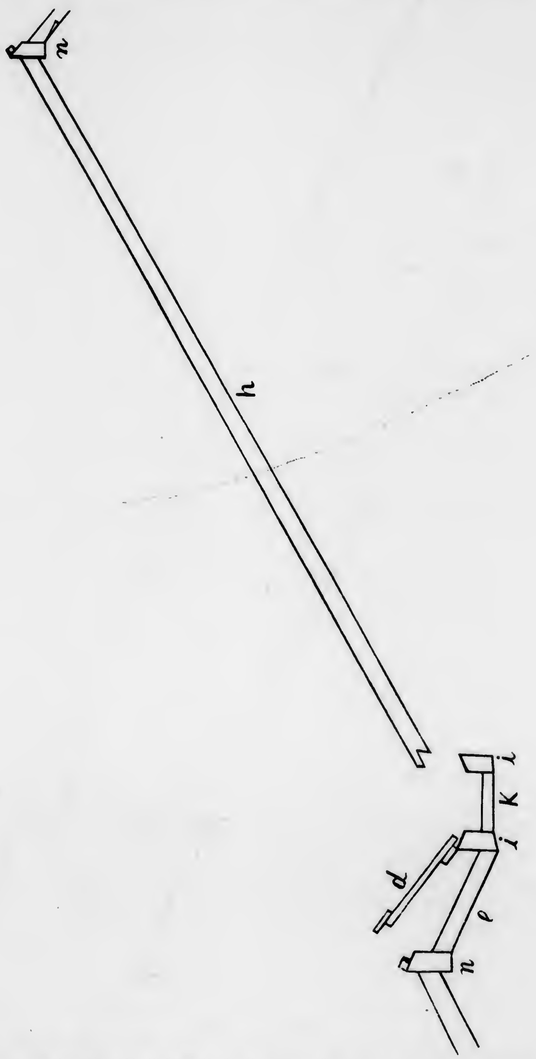
The site must be a southern hill-side, sloping at an angle of from 18° to 25°. Having graded the lot off—say 100 feet square—then build a stone wall on the four sides, averaging about 5 feet high. The outer sides of the wall are to be banked up level with the top, with the earth taken out of the sunken walks of elsewhere. The inside is to be pointed with mortar. We now have a sunken pit—say 100 feet square—to be covered with glass. A diagram will best illustrate the form. It consists of a succession



BLEED THROUGH

of lean-to sections, 10, 12 or 15 feet in width, as may seem most desirable for the work intended. The roof is supported by the upper and lower wall, and also by the rows of posts *a a a*, 6 feet apart, which run under the gutters. The ventilators *d d* are of wood, and serve as an effectual guard against a heavy fall of snow. In case it were ever found necessary to remove snow, a sled with one narrow runner to rest upon the ventilator would be serviceable. But I have found no occasion to use my sled.

As illustrating the simplicity of the parts, which may all be made by machinery, I give a diagram of the parts for one of my houses, which is in sections 10½ feet wide. The sash-bar of spruce, 2x2, is 9½ feet long. The rabbet for the glass is deeper than usual, and is shown by the lip at the lower end, which fits to the level of the gutter. The bottom of the gutter *k* is an 8 inch plank. The two sides *i i*, and also the ridges *n n* are strips of 2 inch planks cut 4 inches wide, all the bevels being alike. The ventilator



d is made of matched pine board cut into 18 inch lengths, and battened by 4 inch strips on the upper and under sides, as seen in the figure, so as to break the joints and prevent the escape of heat. The ventilator runs the length of the section, and is raised by pushers connected to an iron rod. The bar *l* is placed at intervals of 2½ feet. All this work is put together with nails, the sides of the gutters requiring a 40 *d* size. To give firmness, and prevent the warping of the sash-bars, which, as I have said, are of spruce, an inch strip of hard pine, running the length of the section and binding them together on the under side, about 4½ feet from either end of the bar, will be found quite sufficient. A practical test of this form for several years proves it to be permanent and very economical. Spruce is used because it is stronger and cheaper than pine. As every part can be got out at the mill, and can be put together by any ordinary workman, the cost of construction is reduced to a minimum.

A glance at the diagram will indicate some of the advantages of this form, for the purposes for which it is designed. 1st. The position is sheltered to the utmost possible extent. This fact not only secures a saving of more than half the ordinary cost of fuel, but it also insures great steadiness in the temperature, and comparative safety against the accident of frost. 2d. A large compact, square space, with but four outside walls, is a saving in construction, and in exposure to the cold, and also by its size is a safeguard against sudden changes. After a bright day the earth—the who hillside—gets so thoroughly warm that there would be little frost even in the coldest nights, and without fire. 3d. The flood of sunlight is indeed the main advantage. The paramount importance of this condition will be acknowledged by all readers of the *Gardener's Monthly*. By a glance at the diagram it will be seen that in border planting as at *f f*, the ground and plants will have the direct rays of the sun. In the use of tables, as at *e e*, not only the ordinary space for sunlight is secured, but it is evident that the space under the tables will have a good degree of light. sufficient for ferns, mushrooms, etc. As the ventilators lie in the line of the sun's rays very little shade is cast, and this falls within the gutter. It may therefore be asserted that the utmost amount of sunlight is secured for this large hill-side surface. 4th. An ample supply of air, and without the danger of harsh currants, even in the coldest days, is secured by the ventilators, which are at short intervals, and under easy control. 5th. Economy of space is apparent, as every foot may be utilized even under the gutters.

In the diagram. water-pipes, for the purpose of heating, are marked under the table *b*. In my present houses, one of which is of nine sections up the hill. the pipes are carried up and through the four lower sections. The ascent is sufficient to distribute the heat very uniformly through the remaining five sections. A single cast iron boiler does the work of heating a house 100 feet by 110 feet. But it is greatly to be regretted that my first experiment in heating by hot air was abandoned, by reason of a defect in the apparatus. My plan was to take the cold air from the house in a large sub-soil drain under and around the furnace, and then carry the hot air along the lower sections, and let it find its way up. The economy in heating was clear, and the distribution of heat was surprisingly equal, the pipe in the roof and the angle of the hill being just sufficient to cause almost an exact equality of temperature in every part. The defect was solely in the furnace, which was poorly constructed, and emitted gas to such an extent that the plan was too summarily abandoned. There is no reason, however, why perfectly tight plate-iron furnaces cannot be used, similar to those in our dwellings, and it is also perfectly easy to make the hot air of these furnaces saturated with moisture. So far from being discouraged with this method of heating, I am convinced, on the contrary, that it is a most economical and admirable way for heating hill-side houses.

It is a common opinion that with hot air furnaces it will always be found impossible to prevent dryness, dust and gas. But surely we could raise a cloud of steam, if desirable, and as for dust and gas, we may be as free from these as are our parlors. I dwell upon this method of heating as suited to this form of houses where the ascent is sufficient to equalize the heat throughout the house. My experience inclines me to believe it to be a perfect mode of heating, and very economical in the cost of apparatus, as also in the use of coal

Against this form of houses the most serious objection is that it is up and down hill work. This is an important fact in the culture of small pot-plants, and where frequent changes are required. In this case the extra labor involved would affect the advantages. But in the cultiva-

tion of permanent crops, either in sizable pots or in borders, the extra labor of going up and down is vastly overbalanced by the saving in labor in other directions. To the objection that all cultivators have not a hill side position, the reply can only be made, so much the worse for them.

In our various culture of the soil, we must learn to take the utmost advantages of different sites, as adapted to different purposes, if we would secure the best results. It is unnecessary to say that this form does not enter into comparison with structures designed for ornament and pleasure. These are for work, and not for show. They are low, the roof being absolutely level with the hill-side. They are very cheap, costing at the rate of $10,000 to $12,000 per acre, including a cheap heating apparatus. They can be run at less than half the cost of houses situated on a plain. I commend the form to all who are engaged in winter gardening, either as florists, orchardists, or market gardeners.

[The article in a recent number was a private letter, and handed to the printer instead of this; but after it was in type the numerous good hints it contained fully warranted us in letting it stand for publication.—Ed. G. M.]

CLERODENDRON BALFOURII.

One of the most beautiful stove plants that can possibly be imagined is the one above mentioned. Apparently it belongs to the natural order of Verbenas; but perhaps I am not wrong in claiming for it a place more particularly from a horticulturist's point of view—a beautiful plant to please every one. The plant that I refer to at present is covering a balloon-shaped trellis about 5 feet high, and nearly 4 feet through at top. The whole plant will, in a few days, be literally a sheet of white, which is the calyxes, with innumerable small, dark crimson red flowers protruding from the latter, of course all over the plant. It will last in flower for a good many weeks together. The plant is of the easiest possible culture.

This plant is potted in a soil of loam and peat, about equal parts, with a small mixture of sand. One of the most important points in getting it to flower well is after it has made a good season's growth to keep it nearly dust dry for a time—a month or two; then after it has had its season of rest to start it gradually, giving it some liquid manure in the shape of dung-water, as root action has fairly commenced. The plant will flower well in the same pot it made its growth in, and after flowering such a plant could be potted in, if required, to make a larger specimen in the same condition this time next year. Also by resting the plant at different seasons it can be produced in flower to suit convenience. The plant is also well adapted—half a climber—for the back wall of a store, or for clothing in beauty a pillar in a similar structure, making a beautiful contrast.

[The above has been kindly contributed by a friend in Kentucky, who received it in the correspondence of an enthusiastic gardener in England, where the culture of these plants is made almost a science. The plant itself is becoming well known in American gardens.—Ed. G. M.]

TRIMMING APPLE TREES.

BY ISAAC HICKS, LONG ISLAND, NEW YORK

After our orchards are planted and we look forward to the future golden harvests it is naturally a subject of inquiry how shall these promising fruit trees be trained in order to reap the best results. We want good fruit and plenty of it, handsome trees and long lived. I will offer a few suggestions well knowing that most of us like our *own way* best and pursue it as we citizens of a free country have a right to do. As different varieties grow differently, we must form a general idea of how a tree should be, what constitutes a tree model, and shape the branches according to it. We should go around among the trees ever year, and by keeping the head open when young, very seldom will it be necessary to cut off a large limb. We think that the head should be kept so open that the picker can move readily among the branches to pick the fruit.

PEAR BLIGHT IN OHIO.

BY E. MANNING, HARRISBURG, OHIO.

We have passed already three years without blight in Pear trees in these parts. Much has been said and written on blight, not only in this country but in Europe, and the real cause as yet, I think, is as much in the dark as ever. A disease that is not governed by any laws that usually govern disease of any kind, but makes its attacks in every conceivable way, running from the top twigs downward; in the middle running around limbs in the form of a band or ring, and sometimes killing the body of a tree, and the top remaining uninjured or looking sound; and sometimes beginning on one side of a limb and running downwards and upwards, discoloring the bark and wood until its discoloring ceases both above and below. Sometimes it only runs around a single eye,—a disease then that is not governed by any known laws in other maladies. I think the real cause is as yet unknown; it has done me much damage. The varieties worst injured are in order as follows: Vicar of Winkfield, Swan's Orange, Clapp's Favorite, Flemish Beauty, Doyenne d'Ete, Golden Beurre of Bilboa. All varieties here were injured more or less, the thriftiest growers were the worst injured. Those on the levelest ground were worse injured than those on sidehill. My trees were in grass, on limestone soil, generally clay limestone on pebbly subsoil; some on tolerably strong soil, some on thin. Dwarfs were generally worse affected than standards.

A short time ago I visited the grounds of Mr. Limpert at Grove Park in this county, a German of intelligence and refinement. He is an Amateur Pear grower, and has taken pains in the selection of his varieties. Soil of pretty strong but well drained character has given them perfectly clean culture. His losses were four times greater than mine according to the number of trees. Mr. Limpert had steadily pursued the practice of removing every limb or twig or branch as soon as it became affected; but he is convinced it did not do the least good. His Pear grounds did look disheartening.

I am now fully convinced, after three years close observation, that the frozen sap blight theory, the sunstroke theory, insect theory, and all others, are only theories without foundation, and that we are just as much as ever in the dark.

I observed to Mr. Limpert that I thought about that as I did about cholera or any other epidemic of the human family, that he that thought he knew the most about it knew the least. He said I think you are right in that; we know nothing at all. In conclusion, let us hope that this dreaded pest of the Pear grower may, like all other kinds of pestilence, pass away for this time at least.

THE PTERIS.

BY MANSFIELD MILTON, NORTH EASTON, MASSACHUSETTS.

For greenhouse decoration, cutting for bouquets and Wardian Cases the Pteris glauca include some very fine species. Most of them are easily cultivated, some of them thriving under the roughest treatment, and generally freely propagate from spores. The largest growing kinds thrive best in soil composed of about three parts loam with one part peat or leaf-mould, while the finer kinds like mostly peat with a little loam added and a good mixture of silver sand. They require plenty of water, and it is therefore necessary to put plenty of drainage into the pots.

Although some of the species, such as *P. serrulata* and *P. longifolia* will grow under very adverse circumstances, still they repay good treatment, their real beauty being only properly developed under such. The finder kinds, as *P. tricolor* and *P. scaberula*, when carelessly treated are far from being attractive, but when sufficient care is given them they make handsome specimens. The following are some of the best for general cultivation:

Pteris argyreia.—A strong growing variety of *P. quadriaurita*, having large pinnate leaves beautifully variegated with white. It grows well in a greenhouse temperature, but makes better specimens and markings of the leaves more distinct when grown in a stove temperature, being a native of the East Indies.

P. Cretica.—A greenhouse evergreen species, very easily grown and finely adapted for bouquet making and growing in Wardian Cases. Native of Candia.

P. Cretica albo lineata.—A beautiful variegated variety of the above and equally easily cultivated, and useful for cutting purposes. It also, when well grown, makes a handsome specimen. The fertile fronds rise above the barren, and when the spores ripen they fall on the barren and dirty them. For the purpose therefore of having fine clean specimens I remove the fertile fronds before the spores ripen, which induces the sterile ones to increase in size and beauty.

P. geraniifolia.—A small growing species with geranium shaped leaves, very suitable for Fern Cases, but very subject to attacks from thrip. Native of South America.

P. longifolia.—One of the commonest ferns in cultivation, having evergreen pinnate leaves, thriving well either in a greenhouse or stove

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temperature and admirably adapted for cutting purposes.

P. rubrovenia.—A large growing species having the mid-rib and principal veins a bright red color. It requires a strong moist heat to bring out the color distinctly, and keep the plants in a healthy condition.

P. serrulata.—A very common species, being more cultivated for cutting than any other, thriving in a greenhouse. Its graceful appearance and keeping for a long time in water after being cut, makes it pre-eminent over all others. A native of India.

P. serrulata corymbifera.—A beautiful crested variety of the above, having the apex of the pinnæ branched into a beautiful crest. This variety should be in every collection of plants, however unpretending.

P. serrulata augustata.—This variety has long narrow leaves crested at every point and looks beautiful when used in bouquet making, or in Wardian cases.

P. scaberula.—Of all cool house ferns this stands the foremost when well grown. It is an evergeen species from New Zealand. The fronds rise from the creeping rhizome, and the plant succeeds best in a shallow pot well drained having a compost of equal parts loam and peat.

P. tremula.—A strong growing easily cultivated species being a good plant for decorating purposes and also makes a handsome specimen. Native of New Holland.

P. tricolor.—This handsome fern is a variety of *P. quadriaurita*, having the centre of the pinnæ a bright pink with a white band between it and the margin. Being a native of the East Indies it requires a stove temperature and kept scrupulously clean, scale being its greatest assailant. It is very impatient when watered over head, but great care should be taken not to allow its getting dry at the roots. I often see it with a wretched appearance simply from being kept in too cool a temperature and not shaded sufficiently. It requires plenty of light but the direct rays of the sun deprive it of its true color.

CULTURE OF THE TILLANDSIA LINDENIANA.

BY RODERICK CAMPBELL, GARDENER TO G. F. JONES, ESQ., NEWPORT, R. I.

Tillandsia Lindeniana, with indeed many other plants belonging to the order Bromeliaceæ is well deserving of a place in every garden where store accommodation can be afforded it, combining as it does, such extremely beautiful flowers with a neat and compact habit of growth. There is perhaps no class of plants so easily cultivated as the Bromeliads, and yet we seldom see them grown in a satisfactory manner. While I was in charge of the Gardens of Mrs. Packer, I have grown this plant extensively, and the soil I have found best adapted for all Bromeliads, is a mixture of peat and loam in about equal parts, with a good quantity of sand mixed in it. Large pots are not at all necessary, but it is very essential that good drainage should be secured. These plants have another means of subsistence which, however, is too frequently overlooked, or disregarded by the majority of gardeners, either through ignorance or carelessness; but if any one will take a glance at these plants, their peculiar construction will at once be apparent. Their leaves are all sheathing at the base, and form large cavities, which hold water and as the upper surface of the leaves in most instances is channeled, they conduct whatever water falls in a state of nature into the before-mentioned cavities, and this undoubtedly is of material advantage to the plants. Yet how frequently have we seen men who consider themselves good gardeners, deliberately empty the water out, and hence as a consequence the miserable and unsatisfactory condition in which the Bromeliads are usually seen.

My advice, therefore, is always apply water to these plants upon the leaves, so that the latter may have a constant supply standing in their natural receptacles, for this is, in my opinion, of much greater consequence than the soil in which the plants are potted. Any one who will pay a little attention to this fine class of plants, will in due time be liberally rewarded for his extra trouble.

HOT WATER BOILERS.

BY JAMES M. JORDAN, ST. LOUIS, MO.

As different parties are interested in *hot water* boilers, and their different forms of construction, I deem it would not be out of place to give my experience of eight years with hot water as applied to heating greenhouses. I think I have learned a few things, which, if known to others, they are not applied in their practice. First I put in now about one-half the amount of pipe I formerly did, and get more heat. In my first range of houses of ridge and furrow—11 feet wide, with four lines of pipe in each—I have learned to heat by turning off one-half, and running them with two pipes. To illustrate better, suppose the thermometer marks zero outside, and with a good fire (40°) inside, with the water in the pipes at about 180°, then turn off one-half the water; and with the same fire the water will boil, and the thermometer inside will mark 45° to 50°. 2d. Stand pipes should be the same size as the other pipes, at as high as they can be convenient, as the water elevated will give a pressure to the water and steam, which will insure 212° heat through all the pipes with quick circulation. Stand pipes may be placed wherever most convenient, but always have the pipes raised from the boiler to the stand pipe, and then fall from it back to the boiler.

It makes no difference about the number of flows or returns. One flow and ten returns, or ten flows with one return, or five flows and five returns, are all the same, if your pipes are on the same level. Thick pipe is best, for various reasons; they are in longer lengths, therefore less joints to make; less liable to break. I have known water pipes of the heavy kind to carry whole stages of plants for 30 feet in length, when the thin pipe will often crack, if the bearings get out, or the foundation settle. Care should always be taken to give the pipes a chance to expand and contract, and not fasten the extreme end. For a joint, I prefer the rust joint.

The next thing, Which is the best boiler? That I cannot say, as I have not tried one-tenth part of them; have only five kinds in use, but I will say the one I get the most heat for the fuel consumed is a Hitching's corrugated saddle boiler, set so the fire goes through the centre and returns on the outside, then out the chimney; and with 350 feet of pipe we heat two houses with about 3000 feet of radiating surface; temperature 55° or 60° Farh. Of course I mean the houses to be tight. I no not propose to heat all out-doors with a few pipes.

We have one of Hitching's improved No. 17 attached to 650 feet of pipe, battling against 4000 feet of radiating surface running on half rations, and we design to add another 4000 feet of glass to it this season. All boilers set in pits where the heat is of no use, should be bricked in. Hot water is the cheapest way a house can be heated. It is very easy to put in a boiler and run the pipes. Any man that can use a hammer, cold chisel and run a level can set them up.

In calculating the amount of pipe necessary to heat a house that is tight, so as to be safe from lower temperature than 40°, where the thermometer will mark 10° below zero outside, I would say one foot of pipe to seven feet, radiating or outer surface. It does not require more heat to warm a greenhouse over a cellar 20 feet deep than one on the level ground.

EDITORIAL.

GARDENERS' DISCOURAGEMENTS.

There are few things more mortifying to a good gardener than to find a mere pretender preferred to him. He has pursued his profession through years of toil; and when the bright moment should come, all was darkness. He has felt that the world wanted just such as he, and he prepares himself to meet the world's wants; yet when he steps forward with the bread, the great world accepts a stone. It seems incomprehensible to him; and he thinks a gardener's lot the worst of all.

Yet he is not alone in his troubles. All professions are alike. Not a day but something turns up to show how incompetence rules to the suppression of genuine merit. There are scores of men and women who have the genius to become first-class sculptors and painters, and who have made themselves great by persistent culture, yet they by no means command universal fame. On the contrary, if a great national work is to be done, it is more than likely that one whose art is little above a tavern sign, or a dummy for a cigar stand, is the selected and favored one. In private life it is the same. There are lawyers, doctors, engineers, and so forth, who are little worthy of the name; yet they are very often more popular than others infinitely their superiors. Scarcely a day but we read of terrible accidents through the incom-

petency of workers and professional men. Now it is a church or public building which falls by its own weight and crushes scores,—now it is a steamship cast upon the rocks, when the captain did not know where he was, and hundreds of lives are lost,—or now it may be a battle lost, or a nation almost ruined by the ignorance of those in charge. Surely it is not alone the intelligent gardener who is at a discount,—ignorance of how to recognize true merit pervades all classes, and the employers of gardeners are by no means alone.

Yet it must often be mortifying to a good gardener to find himself in a humiliating position, while some ignoramus lords it over him, and treats him with supercilious contempt. There is not a class in the world, who with so little means, accomplish so much as the higher class of gardeners. Many of them are born in humble life; but by a course of vigorous self-culture, become the peers in intelligence of many of the most favored in the land. In all that constitutes a gentleman, Chesterfield could teach them nothing; and in the arts and sciences, outside of the mere requirements of their profession, many have proved themselves worthy associates of the most distinguished men.

What they can accomplish is no better evidenced than in the proud position which British horticultural literature occupies at the present time. Loudon, Glenny, Lindley, Marnock, Fish, Ayres, Moore, Masters, Tillery, Paxton, Robinson, that occur to us as we write, and many more who would readily come to mind with reflection, were all either gardeners, or sons of men in moderate circumstances connected with the soil; and it is this host of intelligent men who have made the English papers what they are. True, some intelligent amateurs, a few scientfic men, and here and there an enterprising nurseryman, have lent willing hands; but the bulk of the work has been garden work; and nobly has it been done.

Even here in America, with all its gardening discouragements, the higher class of gardeners have made a shining mark. To the high order of intelligence which gardeners possess, the *Gardener's Monthly* owes much of its telling influence. As in England, so here, intelligent amateurs and men of science have had some hand in its success, and a dozen or so of our best nurserymen have now and then aided it by some valuable contributions from their pens; but the great bulk of the original matter in our fifteen years' existence has been contributed by practical gardeners, who feel a pride in their profession, and a pleasure in knowing that they are sustaining a magazine which deserves no better honor than that of representing so worthy and intelligent a class.

There are many circumstances disheartening to an American gardener, and it is rather a wonder that they have maintained their reputation as well as they have. A gardener in a first-class English place usually remains, if he is worthy, all his life. He expects, at any rate, when he goes to a situation, to stay. A garden once made lasts for generations; but the fate of most American gardens is in time to become homes for inebriates, or decayed play actors, if not to mere beer gardens, or shooting parks. In vast numbers of cases they do not last the projector's life time; but in half a dozen years or so, after a sudden turn towards gardening by the proprietor, become but melancholy shadows of things which were. In this way good gardeners, who have been fortunate often by a turn of the wheel find themselves out again, and of course discouraged, knowing it very difficult to get into good places again. And after all what are many of these good places? We knew of one situation, where a "first-class" man was sought. The wages seemed very good in comparison with European wages, and a Scotch gardener of high character took the place. When he reached his destination, a cabin, which had been the home of a slave before the rebellion, was given him for his sleeping room. There were no windows whole in it. The door was broken down, and had to be shored up by a log; and he was expected to take his meals with dull colored laborers of the most unintellectual class. Our friend, however, was able to work his way up through all these discouragements, and at the present time occupies a high position in Southern society. But how many have had a similar heart-burning experience? and how many of them have gone through it all, and won at last? Here, before us, is a newspaper containing a report of a distinguished public institution for the past year. Among the items is, "For gardener, $1000." This does not seem out of the way, according to what some gardeners in private situations get; but as we read on we are told that "the Institution feels proud of having been able to secure the services of ——— ——— as gardener, who was selected especially for his great botanical and horticultural knowledge." We happen to know that this

compliment is well deserved. Such a man as Robinson is, or Lindley was in England, such would this gentleman be under similar circumstances. Without any derogation to any of the "Professors" in the same Institution, we are sure he is the equal of any one of them, not only in intelligence, but in the useful character of his work; but we find in the same report that the "Professors" get $2000 and $3000, against this gentleman's $1000. Why should these things be? But a worse feature appears in reading on. "To ——— ——— for attendance on the fires and furnaces one year, $1200." The intelligent educated gardener, "selected especially for his superior knowledge," receives $1000; while the mere mechanical effort of throwing on coal and sifting ashes, brings $200 more.

We see but one way out of all this, and that is by gardeners continuing to educate themselves, and by showing the world exactly what they are worth. This has really been the course which has been so successfully adopted by English gardeners. Loudon taught them to educate themselves, and it is only by the steady exhibition of that knowledge that they have commanded honor and respect. Discouragements will follow attempts to rise in this as in other professions; but the light that is steadily kept out from under a bushel, must eventually make some one see, though there will always be some who will keep their eyes closed long after light has been afforded them.

EDITORIAL NOTES.

DOMESTIC.

Fine Graperies.—We find the following notice of some superior grape houses in an Akron paper:—

"Going to Sixth Ward we were first attracted by the conspicuous greenhouses of Mr. Frank Adams, and without ceremony drove up and knocked for admission. This was promptly accorded and to say that we were filled with wonder and admiration is to pay a deserved compliment to the place we visited, (for you know a reporter understands what he is talking about.) It far surpassed anything of the kind we had any knowledge of in the city. Such a word of floral display! It seemed like an immense bouquet gathered from the gardens of all sunny climes and filled with their fragrance. And such it really was. Upon inquiring we found that there were collected there over three hundred varieties of plants and flowers and all were in the freshness of early summertime. In addition to these were the blooming and ripening fruits of the tropics. The bananna with its awkward heavy clusters; the orange in various stages of growth; the lemon ready to be plucked, and the fig bursting with ripeness. These surrounded by their tropical kindred in full bloom and the variegated colors and beauties that beset them, made up a combination that is not surpassed in the magnificent National Conservatory at Washington.

"Passing from this view we were led into the presence of another less varied but not less attractive. The fourth and last subdivision is what may be called a grapery. Here we found suspended and hanging all about us immense clusters of most beautiful green grapes so clear and bright as to be almost transparent. The vines are trained to the top where they meet, and from them are suspended a perfect canopy of rich fruit which extends to the ground on either side. We are sure that this is the most remarkable grape production ever witnessed in Akron, if not in the State. Only a year ago last February the cuttings with a single eye each were put in the pit. In July they were transplanted to the place they now occupy, the largest vine not exceeding eighteen inches in length. They were trimmed back in the winter, and last march, to the surprise of Mr. Adams, who had no idea they would bear so soon, they were filled with blossoms. Now there are bunches of grapes many of which weigh at least three pounds and are so heavy that artificial means are required to hold them to the vine. They have completed about three-fourths of their growth, and by the time they ripen will be of surpassing size and beauty. The room contains about a hundred plants and only the alternate ones are allowed to fruit this season. The atmosphere is kept at a steady temperature of about 90 degrees. The varieties of grapes in this collection are numerous, comprising the newest and choicest grown, such as the Bow-wood Muscat, Muscat of Alexandria, Muscat Hamburg, Golden Champion, a new grape and the largest that grows, the Charlesworth Tokey, and about twenty other varieties. In growth all of them seem to be equally hardy and are vieing with one another in the early production of fruit.

"Mr. Adams has been especially fortunate in securing the services of Mr. Thos. Ottaway, a most accomplished and skillful florist, land-

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scape gardener and architect, who has had large experience in England and in our own Southern States. The construction of his greenhouse, covering an area of four thousand feet, is wholly the work of Mr. Ottaway and the choice collections within have been largely made by him. Taking all together Mr. Adams may be justly proud of his efforts in this direction, and if he were a boasting man, would be safe in challenging the State for superiority."

Cracking of Fruit.—When noticing the theory of cracking of fruits as explained by M. Boussingault, an account of which theory was widely circulated some months ago, we stated that, however correct his experiments might be, proving, so far as they went, that cracking was due to an absorption of moisture, more than the skin would hold, it would not account for all the phenomena of cracking. We had some years ago shown that the cracking in the Butter Pear must be due to fungoid operations; and in a recent note on the cracking of pears Mr. Berkely says it is often due to a fungus, the Helminthosporium pyrorum.

The Timber Law.—The Timber Act of last year has been amended so as to be, as it appears to us, somewhat more practicable. The principle at least is a good one in this, that it encourages individual enterprize instead of instituting a cumbrous "Bureau of forestry," which would, in our opinion, result in very little practical good. The following are the main provisions of the Act:

"Persons who are heads of families, or over 21 years of age (without distinction of sex), and either citizens of the United States, or having declared their intention of becoming such, may enter not more than 160 acres of land, either minimum or double minimum (land valued at $1.25 or $2.50 per acre), by filing an affidavit of such intent in the local land office.

"The person entering the land, must break and plant with trees one-fourth of it; one-fourth of this required fourth must be broken within one year from the date of entry, another fourth within two years, and the remaining half within three years. One-fourth of the area required to be planted must be planted within two years of the date of entry, another fourth within three years, and the remainder within four years; the trees to be not less than 12 feet apart each way. It is therefore required that the land be broken one year, and planted the next. After having been planted, the trees must be protected, cultivated, and kept in healthy growing condition for eight years next succeeding the date of entry. In case of the death of the person entering the land, his heirs may continue the occupation and care of the trees and complete the title. The land required under this act, is not liable for debts contracted previous to the issue of the final certificate therefor. The fee to be paid on entry is $10, and the commission of the officers of the land department in the whole amount to $8 more, the total $18 being the full charge up to and including the final proof of occupation and fulfillment of the required conditions."

By this it will be seen that land, which might cost perhaps $250, is given on condition that one fourth is put in trees at least 12 feet apart. This reduces the matter to one of profit to the purchaser. Is it cheaper to buy the whole, or spend the money on trees? It strikes us that $250 will not go far in planting and caring properly for forty acres of timber. Very small trees will have to be planted; and in these countries there will be some difficulties with small trees 12 feet apart. Still for some years corn, potatoes, or other crops could be grown between the trees, serving alike to shade the young trees and make use of the ground. There is some advantage in the division of time required to plant the whole. The first plantation can be set thicker than needed, and the trees transplanted to the new lots when the required time comes around.

One of the best features of the Act will, however, be the feeling which will be created that young timber on a place is *worth something*, and this moral influence we regard as the strong point in the whole thing. On the whole, we regard the Act as one of the most progressive steps that has been taken towards judicious timber culture for many years.

A Uvedale St. Germain Pear, weighing thirty-three ounces, was exhibited at the last fall exhibition of the Georgia State Agricultural Society's exhibition at Atlanta last year, by Mr. Hardin, of Marietta. This is probably the heaviest pear of this kind ever raised.

Conover's Colossal Asparagus.—Our good brother of the *Horticulturist* has the following:

"This has now been well introduced into England, and tried with such success, that one gardener writes to the *Gardener's Chronicle*, they find it 'earlier for use, and also plants of the same age as the Giant are nearly double the size, so that it may be considered a valuable addition,' and yet our American scientific horticulturists who insist upon it that it is not a new variety, cannot for their lives tell why it is so much better, or account for its growing in poorer soil, yet attaining double the growth in half the time of the old sorts."

There are gardeners in America who have not found any difference in any variety of asparagus, and why the opinion of "one gardener" in England should be worth more than one gardener in America, is not easy to understand.

Neither is it easy to understand how there can be any variety in asparagus. The male and female flowers are *on separate plants*. Generally when a plant is noticed to be an improvement on its parent, it can be *selected*, and seed saved from *it*. In this way new varieties are perpetuated. But the new asparagus, if it is a male, cannot propagate itself at all; and if a female, it has to have the pollen from the other inferior forms when the seedlings of course are taken back from the improvement. If the editor of the *Horticulturist* can explain how there can be varieties reproducing themselves under these circumstances, it will be time enough to value the "one gardener's" opinion. As one of the "American horticulturists," who have insisted that this is not a new variety, nor any variety, we may be pardoned for asking these questions, and hope not to be considered captious or critical therefor.

Mr. Robert Manning.—No one has suggested it to us, but on looking over our review of the Proceedings of the American Pomological Society, we think we have not done justice to Mr. Robert Manning, who took an active part not only in the workings of the meeting last year at Boston, but in getting out the Proceedings. Never pushing himself prominently forward, he is yet one of the most active and unselfish workers in horticulture we have; while his great knowledge of fruit especially, renders his services particularly valuable.

The Agricultural Department.—The *Boston Cultivator* remarks that there has been much injustice done the Agricultural Department at Washington in some of our agricultural cotemporaries—a remark with which we cordially agree. There may be an honest difference of opinion as to whether the Bureau of Agriculture is ever likely to accomplish the good its best friends hope for; but one can scarcely discuss this deep principle without seeming to favor personalities of the most puerile kind directed against gentlemen at present connected with it, whose honesty of purpose will bear favorable comparison with any branch of the public service. One of our good neighbors, who thinks the Commissioner does not know as much as a commissioner ought, told its readers in the same issue, that the Mock Orange of American gardens was the *Halesia tetraptera*, and easily raised from cuttings! and another who thinks it knows a much more intelligent man than Mr. Watts, also tells us that the Spiræas are among the most popular of our hardy "*climbing vines.*"!

The most repeated story is that the seed distributed "never grow," and are "mixed with the vilest weeds." We do not know where these seeds are obtained; whether in New York, Philadelphia, London, or Paris; but we obtained a quantity this spring—wheat, rye, beans, peas, and others, both of "agricultural" as well as of the regular "vegetable" character; and a careful examination showed that no clearer or better seed could possibly be distributed. *Everything* grew well. The beets we counted a few hundred seeds; and *every seed*, we believe, grew. We did this that we might know of our own knowledge what we have to write about. As to the policy of this seed distribution, we have placed the *Gardener's Monthly* on record, among the first, against it. But we do not see that the present Commissioner is responsible for the introduction of the practice, whether it is a wise one or not.

We think our cotemporaries in their zeal, no doubt honest, for the improvement of the Department, have been unwittingly led into injustice in this respect; and we therefore take great pleasure in giving these facts in favor of the Department from our own experience. We do not suppose any commissioner would always do as other people think they would under similar circumstances; but we do believe that no one is likely to be placed in that position who would do much better on the whole than Commissioner Watts is doing.

Fall Bulbs.—It will not be long before people will think of planting fall bulbs. Hyacinths, Tulips, Crocus, Snowdrops and Narcissus, are always in demand, because well known. Of late years the various species of the true Lilies have been in much demand, and these ought to be set out in the fall at the same time with other bulbs. All the species of the Lily genus, Lilium, are hardy.

The old Crown Imperial is one of the most beautiful of bulbs. They are confined to red and yellow, although there are about a dozen varieties embracing intermediate shades. These also require fall planting. The old Gladiolus communis is hardy, but most of the hybrid kinds, of gardens, are tender, and must be preserved with Tuberoses and other tender bulbs till spring. These are the leading bulbs for fall planting.

B. K. Bliss & Sons.—It will gratify the numerous patrons of this well-known firm to learn that its business has increased so much that it has had to seek more extensive quarters. It has founded its new home at 34 Barclay Street, N. Y.

The Honey Locust and the Tamarind.—The leaves of these trees have a certain resemblance, and it is not unusual for people to believe their Honey Locusts are Tamarinds. A discussion of this character has been going on in the Reading papers. Mr. Alex. Burnett has had to show that the Tamarind could not possibly exist in the open air of Pennsylvania. It is astounding how wide spread is ignorance of simple natural laws. It is not long since one-half the intelligent people of the land were going wild over the Eucalyptus globulus as a forest tree for North America, when one would suppose a child would know enough of the climate of Australia to understand that trees grown there would not endure frost.

An Enemy to Bee Culture.—Professor C. V. Riley, the distinguished entomologist, saw bees at work eating fruit, as many others besides him have done. He had occasion to say this in public, whereupon a great storm has been raised against him. We shall look forward with some interest to the "resolutions against Riley," which will, no doubt, be put through some western convention this winter. In view of his prospective sacrifice, Riley pleads guilty to a possible folly in having made the statement; but with that strange perversity, which so often characterizes the obstinate seeker for truth, adds to his original offence by re-asserting his former statement! If he can sing "There is hope for me," with a clear conscience, we shall send our next new bug to some other body to describe—perhaps Fuller.

FOREIGN.

New Water Pot.—A new water pot has been introduced to English gardens which has no rose on the end of the spout, but a row of small holes all the way on each side. In this way the watering is said to be more rapidly done, and the water is spread more regularly.

The Japan Oaks.—Numerous species of the oaks of China and Japan are now coming into popular use in England. As our own people have measurably overlooked their own beautiful species—rarely caring to have them in their collections—it is probably only to the very few that this paragraph will be interesting.

SCRAPS AND QUERIES.

DISEASED VERBENAS.—*S. D., Troy, N. Y.*, writes: "I have a bed of Verbenas dying off very fast. They were raised from seed; made a splendid growth from 30th March (the date of sowing) till the last week of June, when many were in flower. All the plants affected appear as if they were cut with a knife below the surface of the soil, from their wilted appearance, and the stem, for a few inches from the ground, is in some black, and in others blackness is not perceptible. Others on the same bed, raised from cuttings, are quite free from that which effects the seedlings. Those from seed made the finest plants till affected, as I have described. I want to hear the cause and preventative. Ten per cent. of the plants suffer. They are growing on a sandy soil, enriched with well-decomposed manure."

[The only disease in Verbenas generally recognized is the Black Rust, which of course this is not. Besides, seedlings are generally free from this disease the first season after raising. We have not heard of any similar trouble before. Very often the White Grub, as the larvæ of the May Beetle is called, operates in just this way; but the statement that the stem seems to blacken from the ground upwards, does not stamp the insect as the cause of the trouble. After their attack the whole plant gradually dries up; no one part before the other. It may be a fungoid attack—examine the roots with a good pocket lens. In most cases of disease from root fungus, the little parasites can be plainly seen as threads fastened, and feeding on the roots.]

TRADITIONAL TREES.—The subject touched on by "Joan" in our last issue, is one calculated to interest a large number of our readers. She remarked in a letter accompanying her article, that in looking up the literature of the subject, she was struck by the paucity of American material. Yet there must be many trees in America around which much local interest centres. Of one of these the Rev. J. H. Creighton, of Lancaster, Ohio, kindly furnishes us an account in the following note:

"To those given in last *Monthly*, I will mention another, the *Chillicothe Elm*, which is the largest tree in Ohio, and I have been told larger than any in New England. It stands in the Methodist parsonage lot, Chillicothe, Ohio. It is nearly eight feet in diameter, and one hundred and ten feet across the branches. The top is well proportioned, but not more than forty or fifty feet high. The trunk is hollow, and has been for many years, but the branches are thrifty. It is supposed to be four or five hundred years old."

YELLOWS IN THE PEACH.—"Melacoton," Harford County, Maryland, writes: "Are we to for ever abandon all hope of getting at the root of the terrible disease known as yellows? In talking with a peach grower from a section of the country where it once prevailed badly, he gave it as his opinion, that it was a mystery that could never be reached. In this part the trees seem very healthy, but in a part of New Jersey that I came from, I had my whole orchard swept off once, and I should be sorry to have to go through a second experience of the same kind."

[The "mystery" is only with those who do not read the gardening papers, and think that what they do not see no one else can know. Our knowledge of plant diseases has been very much simplified of late years, and many of them are well understood, the peach yellows among them. If you dig around a peach with the yellows you will be first struck with "a mushroomy" smell. Picking out the roots, and examining them with a lens, you will see millions of thread-like fibres, which are the Mycelia of fungi. These eat the young fibres, and leave only the main roots, through which all the nutriment of the plant has to be gathered; and as an old root is unable to do much more than draw in water, the tree becomes in a measure starved, and the leaves become yellow, just as they would be if growing in poor soil, which, though the plant might have plenty of roots, furnished nothing for the roots to eat. To have plenty of roots and no food, is equivalent to having plenty of food and no roots. The effect on the plant is just the same. The readers of the *Gardener's Monthly* are quite familiar with these facts. It is no "mystery" to them. Hence remedies, which look to the destruction of this root parasite, are employed. Hot water has done it; so has a weak solution of salt; others have found a solution of potash succeed. The exact nature of this fungus, so far as we know, has not been investigated to entire satisfaction. Fungi are very polymorphous. This one may enter into the circulation of the plant, and exist in that case as an apparently distinct species, extending through the tissue, and destroying it as it goes. This seems likely from some experiments by Mr. Thomas Taylor, of the Department of Agriculture, reported some time ago in our pages. At any rate it is generally believed that a bud, or even a knife used in pruning a diseased tree, will communicate the disease to a healthy one. We do not know that this is so with that exact knowledge which should enter into the foundation of a scientific theory; and we merely give it as a general belief. At at rate there is no longer any reason for believing that we shall never get at the *root* of this disease. The disease indeed is *at the root*.]

TREE ROSES.—*X, Bloomington, Ills.*, says: "You will oblige one reader, and I doubt not very many, by telling us whether, in your opinion, it is worth while to plant out tree roses in this country. My own conviction has been, and is, that for our Northern States, and I may say practically the whole country, they are a humbug."

[Once in a while, when the plant has got a good head, and is growing in a place where the stem is shaded from the sun, a tree rose does well; but the vast majority of those tried in America have been failures. With but a few branches and leaves on the top of a long stem, there is not circulation enough to supply the waste of moisture in our dry climate, and hence the sap, unable to ascend the stem as freely as is necessary to good health, expends itself in

throwing up suckers, which soon destroy the main stem. A gardener of extensive experience in this climate, and with a superior knowledge of his business, could make them do well; but it requires so much superior skill to do it; and so very much more than is required in Europe to grow tree roses, that they will be almost always failures in the hands of the community generally.

BALDERSTON'S IMPROVED PLANT TUB.—This is made of an iron frame, which can be taken apart and screwed together again in a few minutes, making it very convenient for stowing away when not wanted. The interior is of slate or other imperishable material, and the whole far superior to wooden tubs, which, in large plants, are difficult to replace when rotting away. It is often difficult to re-pot a large plant. As this can be taken to pieces, and re-built in the same way, it renders the operation of potting comparatively easy.

THAT LARGE CUCUMBER.—The Marquis of Lorne Cucumber, referred to in our last, was *thirty six* inches in length.

A NEW BOTANICAL PRESS.—B. Frank Leeds, 528 Walnut Street, has shown us a neat contrivance in the way of a plant press, for use in field or forest. It is made of two frames of walnut, the panels of which are an eight of an inch thick, of pine, doubly crosswise, veneered with walnut, and the entire surface is perforated with quarter inch circular openings for the passage off of moisture. It has nickel plated fixtures at the ends for drawing the frames together, which are easily and quickly worked. The article is compact, convenient for carriage, and good looking, and fills a want hitherto uncovered.

DISEASED CATALPA TREE.—*W., Fifty-third Street, New York*, writes: "Looking upon gardeners as doctors, I apply to you as to one of the chiefs of the faculty. My case is this: Before my house there stands a Catalpa Tree about twenty years old. This sort of tree I consider about the last that should be planted on city sidewalks. Go to Franklin Square in your City, and, if they still stand, you will find a whole lot of them looking exactly like a band of cripples sunning themselves in the hospital-yard. A vagary of nature, they delight in contortions, in ugliness of shape of growth, and are apparently created for the purpose of setting off the beauty of the rest of vegetation, and for nothing else.

"Now New Yorkers think that all trees, like their children's polls, must be cropped close and often. Accordingly, the good lady, (peace to her ashes) who formerly lived in this house, had, about four years ago, another thorough trimming of her tree. The tree survived it out of sheer kindness, I believe, and to my astonishment, tried its very best to overcome the mutilation. Instead of the forking thick branches going off horizontally, it now shows three or four upright lean arms, an attenuated straight laced specimen of a creature. This year, however, it looks really poor and poorly. The foliage is sparse; last year's young shoots have died; it has shrunk, and requires—well, that is just what I want to know. Inflation? no, sir, I am no inflationist, and, unless you say it, shall not resort to stimulants. By the way, the bark is whole—not bitten or gnawed by the horses; it has plenty of sun and space, and the weather, you know, has been moist and favorable to growth and health.

"As this tree constitutes all the woods I possess, and is a real source of pleasure to me and my family, help me, Mr. Editor, to save it. 'Man and beast God helpeth;' help you my tree."

[It is impossible to tell what can be the matter with our correspondent's tree. When leaves get yellowish, it is generally through an injury to the fibrous roots, which may be by too much water, too caustic food, fungus growths or insects. Injury to the bark from the boring of insects, or the gnawing of horses, also have the same effect. In brief, whatever interferes with the full nutrition of the tree, causes sickly-looking leaves. Cutting back trees often injures a tree, although for the time being it seems to grow faster. A tree constantly pruned is always in more danger from disease than one untouched. Only a close examination by one who understands tree diseases, could decide the present case.]

J. C., Mt. Pulaski, Ills., writes: "Fruits are several days later in ripening with us this season than usual. Our Alexander peaches are not quite ripe, but are far ahead of Hale's Early. We are fruiting some young trees this summer, and hope to be able to send a specimen when ripe."

BOOKS, CATALOGUES, ETC.

A SHILLING BOOK ON ROSES.—By William Paul. Loudon, Kent & Co, Paternoster Row, London. The poets from Sappho to Swinburne have sung of roses, and yet thousands through all time may yet sing of them, and find new matter for every song.

"The tear down childhood's cheek, which flows,"

may not suggest to the poet that it

"Is like the dew-drop on the rose."

Just exactly in that way; nor will the

"Roses, wet with morning dew,"

present perhaps the same exact appearance to every observer; but in a thousand ways never yet thought of, similes drawn from the rose will thrill with pleasure through many a mind. It is with rose-culture as with the poetry of roses. It is probable that more has been written about this than about the culture of any other plant; but who tires of the reading? When the poet asserts that it is hard to

"Lend fresh interest to a twice-told tale,"

he must have forgotten the history of the rose The tale has been told a hundred times, but always with fresh interest to the old story.

And here is a little book—costing only a quarter—well printed and neatly bound, which will do as much to create this renewed interest, as anything that has come before us. It has twenty chapters, *i. e.* on soils, standard roses, weeping roses, pillar roses, climbing roses, bush roses, pot roses, summer roses, for which we are glad the author pleads so well; autumnal roses, Tea roses, the Rosetum, on pruning, on propagation, seedlings, exhibiting, growing for exhibition, old roses, new roses, monthly calendar of operations, selections of roses for various purposes—a pretty long list for a shilling. Of course there will be much in an English work not well adapted to an American garden, but with every allowance for these differences, there is no lover of roses who need fail to get a shilling's worth out of this little book.

REPORT OF THE CONNECTICUT STATE BOARD OF AGRICULTURE FOR 1873 '74.—From T. S. Gold, Secretary. It contains an interesting discussion on the various causes operating to make land sterile, the opening essay being by Mr. Gold. Mr. Terrill opened a discussion on "manures the best foundation of agriculture." It appears to be the sentiment of some of the most intelligent members of this Society, that plowing under green crops for manure, answers best for light soils, and is not of much consequence in those of a heavier nature. The manure question is particularly prominent in this volume. Professor Atwater's lecture, bearing on this question, is here given in full. It has already been frequently alluded to with commendation by the press generally. Pomology is well represented by a report from P. M. Augur. Most experienced fruit growers will agree with him, that fruit trees to do well require an annual manuring.

ORCHID CULTURE.—The catalogue of Mr. Linden, of Ghent, Belgium, now before us, contains a list of hundreds of these beautiful plants, as well as of numerous palms. Mr. Geo. Such's list is also before us, and is probably the finest collection in the Union; and not much inferior to some of the most celebrated European ones.

NEW AND RARE FRUITS.

BOYD'S SEEDLING WINTER APPLE.—At what are called agricultural fairs, one can seldom get any correct idea of the value of a fruit or flower, because the judges of these side issues are not generally men who know much about the subject, and they are generally actuated more by a friendly desire to divide the premiums equally between the exhibitors, so as to pay them for their trouble in coming, rather than with a view to the merits of the articles themselves. This does not appear to be the case with the Georgia State exhibition last year, the Proceedings of which are now before us. Some of the best men in the State are on the committees, and in their

awards they evidently understand that something is due to the public as well as to the competitor. At the Atlanta exhibition of this Society, a premium was offered for the best collection of table apples grown in Georgia; but the Committee reported that the competition was not worthy of the award. For the "best Georgia seedling winter apple" their were four competitors, the premium being a $10 silver cup; but none of them received the award. One of them, however,—"Boyd's Seedling"—received "honorable mention," by which, from so honorable a Committee, we think more of the value of this variety than if it had been given the cup by a committee such as ordinarily make awards.

Late Peach—Bastion's October Cling.—This peach was in competition with others for the $20 pitcher offered for the best late peaches at the Georgia State Fair exhibition, from October 27th to November 4th, at Atlanta, and though not thought worthy of so handsome a premium, was considered sufficiently deserving to have $5 awarded to it.

Seedling Gooseberry, *from Mr. H. M. Engle, Marietta:* "I send by to-day's express a few seedling gooseberries. The variety originated on the grounds of a neighbor of mine. It is evidently a seedling of the American cluster, or Houghton, as there were no other kinds on the premises. It has now been fruiting about four or five years, side by side of the above-named kinds, and has thus far proven itself as profuse a bearer, and as free from mildew as either of the above; and in addition is a sweeter berry, and its fruiting is now over, just as the others commence to ripen. The samples which I send you are about the last that were on the bushes, and are not fully average size.

[There is no mistake about this being of the American species. The berries are very smooth—we think equal—and another to whom we submitted them thinks better in flavor than the Houghton's Seedling. It probably averages larger, and we think well worthy of naming and disseminating.—Ed. G. M.]

A New Species of Fruit.—It is said in the English papers that a new species of fruit of a character that will place it among leading articles, has been introduced from Japan. We have seen no account of it, but that some of the plants were exhibited at the Royal Horticultural Society—awarded them a first-class certificate. It is called *Pyrus Maulei*, so it is probably allied to the apple, pear or quince.

DOMESTIC INTELLIGENCE.

The Catalpa as a Timber Tree.—There appears to be no doubt, from all the evidence, that the timber of the catalpa is of the most durable kind. Some which has been in use for many years in Delaware and other places, has proved the equal of chestnut when used as posts, and in other particulars it has been found of great value. It is remarkable that in the great talk of a few past years on valuable timber trees the catalpa should have had very little said about it, and yet it is almost equal to a cottonwood in rapidity of growth, and will grow and do well in almost any soil.

In books on trees it is often said that the buttonwood is the largest growing tree east of the Mississippi river. Perhaps this is true when we regard the length of the bole as well as the size of the trunk; but in absolute growth, we think it quite likely the catalpa would often equal it. In the drives around Germantown one may often pass specimens with trunks probably fifteen or eighteen feet in circumference. There is one on the Johnson estate, and another on the old battle ground at Chews, which appear in passing to be between the two figures named. Perhaps it has not received the attention its good timber and rapid growth deserves, because when young it loses the upper portion of its leaders in the winter season, and thus does not make a straight bole. The trees we see naturally all seem to have a tendency to branch low on this account. But a friend who has had experience in timber growing tells us this is easily remedied by cutting back the first or sometimes the second year's growth. A young plant from seed sown in April will often make a growth of four feet

the first season. If so left, the leading bud dies, and it branches at this point; but if it is cut back to the ground, it will next year throw up a straight stem eight or ten feet high, and very little dies away—not enough, in fact, to interfere with straight growth of the main trunk; and in this way a valuable timber tree is assured.

This hint is valuable as applicable to many other trees, for most are apt to branch and become crooked when growing the first year or or two from seed; but cut back in this way, they push up the next season straight and strong for several feet.

In regard to the growth of the catalpa, we examined a young one recently down, in which the annual rings of wood were some of them between a quarter to half an inch thick—a rate of growth few things could excel.

In some respects the catalpa is superior to locust, for that wood is too hard to contract after the iron nail, heated by the sun, contracts in the fall, and thus permits the nail to become loose; but to this we can nail as securely as to the chestnut post, which indeed this wood much resembles.—*Germantown Telegraph.*

Influence of the Graft on the Root.—At the last meeting of the Indiana State Horticultural Society, Mr. W. H. Ragan said:—"It is a fact that no intelligent nurseryman will gainsay, that varieties of fruit trees change, to a certain extent, the character of the root upon which they are grown. Yellow Bellflower and Pryor's Red are good examples. A row of trees of either of these varieties, grafted or budded on as many different varieties of seedling roots as there are trees, each naturally having its own peculiar habit, will be found to have the character of root peculiar to the tree to which it belongs, although the roots are entirely of the seedling, and naturally differing widely from each other. Pryor's Red root is uniformly branching and feeble—Yellow Bellflower as certainly strong, vigorous and fibrous.

Origin of some Grapes not generally Cultivated.—At the late meeting of the Michigan Pomological Society several not generally cultivated varieties of grapes were thus described by Mr. Lyon of the Society:

The Ives seedling originated in Cincinnati, in the city lot of H. Ives, and was brought to notice in 1858 by the Fruit Committee of Ohio, who gave an objectionable qualification, saying it showed a tendency to "run back" toward the fox grape; "and that this was no recommendation with those among whom the Charter Oak, Northern Muscadine, and the whole Fox family are in disfavor, though praised by some wise men of the East." It is deemed too late as an early grape, but its quality and the weight of its expressed juice are worthy of mention.

The Crevelling grape originated with a family of that name, 140 miles north of Philadelphia, and was exhibited at New York in 1858. It was noticed and figured in 1860.

The Adirondac grape originated a few steps from Lake Champlain, in Port Henry, Essex Co., New York. A wild grape-vine, quite large, was grubbed up by J. G. Wetherbee to make room for an addition to his garden, he supposing it to be a common wild vine. A year or two after this, a small grape-vine made its appearance near the spot, and as it grew vigorously, he gave it a trellis and training. It commenced to bear in 1858, ripening previous to the 10th of September, before the Isabella had commenced coloring; two weeks before the ripening of the Northern Muscadine, and three weeks before the Delaware. It has been very largely disseminated.

The Iona grape originated with C. W. Grant, of Iona, an island in the Hudson River, not far from Peekskill. It was grown from the seed of the Diana, or, as some say, from the Catawba, and selected from several thousand seedlings on account of its hardness, earliness and general good qualities. It was delayed for several years in its introduction to the public by the destruction of the young scions.

The Israella is also a seedling, originated by Dr. Grant, and was introduced to the public cotemporaneously with the Iona. It was named after Dr. Grant's wife, by the *Horticulturist.*

The Eumelan grape is a chance seedling, which sprung up at Fishkill, N. Y., and by some believed to be a cross between the Clinton and Isabella. It was secured and propagated by Dr. Grant, and introduced to the public about 1868. They begin to color about the middle of August, and are good for eating by the 10th of September.

The Croton grape, the last upon the list, originated with Dr. S. Underhill, of Croton Point, N. Y., and was first exhibited at the New York State Grape-growers' Association at its first annual exhibition, in 1868. It is a white grape, and was raised, with a number of others,

from seed produced by fertilizing the blossom of the Delaware vine with pollen from the Chasselas de Fontainebleau in the open vineyard.—*Western Rural.*

EARLY PEACHES.—Early fruits should be far more popular with the Southern fruit-grower than they are. In late fruits we can never hope to compete successfully with our Northern neighbors, but in early fruits we have a monopoly that should be made the most of. And in no other class of fruits may this monopoly be made more profitable to us than in that of peaches. Where this crop succeeds, there is nothing so profitable—nothing, we mean, that leaves so much clear gain, after deducting the necessary expenses of raising and marketing. For instance, we have known Yellow St. John peaches sell in New Orleans at $27 per bushel; we have often sold the Honey peach at from $10 to $12 per bushel; and to-day we learn that a neighbor at Grand Bay has just received returns of a few boxes of this latter variety, which he shipped on the 4th inst., at $12 to $14 per bushel, hard as the times are. The Northern early peach crop comes in about the first of August; in the Middle States not earlier than the middle of July. Here, then, we have a monopoly of the market, and the very cream of it, for at least a month or six weeks. With the immense, wide-spread market to sell in, and the limited area of the Gulf States only to supply it, we need never fear that the very early fruit market will be overstocked with good fruit of any kind, and especially of peaches. The following varieties are the most promising very early peaches, new and old: Early Beatrice, Honey, Yellow St. John, Early Tillotson, Alexander, Dr. Hogg, and Troth's Early. Hale's Early we leave out as worthless. Let us have detailed accounts of these and others the present season, *pro bono publico.—Our Home Journal.*

GOOD PENNSYLVANIA APPLE.—The *Buck's Co. Intelligencer* says:—"One of the most valuable fall apples we have, but one that is only locally known, is the 'Cornell's Fancy.' It is of rather more than average size, mostly covered with red streaks and splashes, with some outward resemblance to the Cider apple. In texture it is tender and breaking, and in flavor decidedly good. It is one of the best eating apples at this season. In the vicinity of Newtown it is grown to some extent, but deserves to be more widely diffused. Some handsome specimens have been received from John G. Spencer, of Falls, on which we pronounce the above judgment."

FLOWER-TALK.—HONEYSUCKLES.

Around my porch in tangled twine,
  Where brown bees hover,
A quaint old Honeysuckle vine
  Steals drooping over;
Its clustered sweets are hanging low,
And on its breath blown to and fro
This song comes floating, sad and slow,
  Adown the Clover:

"Lovers have stood within my shade,
  Watched and waited;
Kisses and prayers and vows been made,
  And blithe young hearts been mated;
My branches are hung with bird-homes gray,
Whence the wren and her nestlings flew away
In the heart of the early summer-day,
  When by storms berated.

"The lazy south wind floating by
  Hath never missed me;
And sweet June Roses, hanging high,
  Forever tryst me.
We mingled branch and bloom together,
Through all the golden summer weather,
Till blossoms fled, and white snow-feather,
  Slow falling, kissed me.

"The snow-flakes came, with bitter wind,
  The Roses slaying,
Then honeyed core grew withered rind,
  All winds obeying;
And ragged leaves, swift fluttering down,
Left my poor branches bare and brown,
Till snow-wreaths wove their latest crown
  With mute essaying.

"My rose-friend nigh, alike bereft
  Of sweetness clinging,
Had yet her long-hid weapons left
  For cruel stinging;
She pierced my young limbs through and through,
And closer clung when wild winds blew,
As one might say, 'not false, but true,'
  The while pain bringing.

"The spring will come with sweetness rife,
  An eager lover;
Will sheath the thorns that take my life,
  In glossy cover.
But I—I shall not bloom in June;
For me no birds exulting tune,
No sweet last kiss of harvest moon—
  My life is over.

"I crumble like my last year's leaves;
  My branches wither,
And part, like last year's unbound sheaves,
  Wind-wafted hither.
The winter's breath was all too chill;
The cruel thorns are clinging still;
I droop in loveless age, until
  I drift—ah, whither!"

—NORA BECK, in the *California Horticulturist.*

EUCALYPTUS GLOBULUS IN CALIFORNIA.—According to the *San Francisco Bulletin*, there have now been planted in California probably not less than a million trees of the Eucalyptus globulus, or Blue Gum tree, which has become so famous for draining damp soils and destroying malaria. Near Haywards, in California, about 150,000 of the trees were planted by the Surveyor-General, and though they are only about five years old, many are 40 feet or 50 feet high. Amongst its peculiar features, indeed, may be mentioned its rapid growth, and its great size, since it attains a maximum height of about 300 feet, with a circumference of from 30 feet to 50 feet.

FOREIGN INTELLIGENCE.

A JAPANESE HORTICULTURAL FETE.—A correspondent of the *Art Journal* writes:

I will endeavor to give your readers an account of Kioto, and a description of the three national exhibitions now being held here, and which are opened to all foreigners who have obtained a passport from their consul. Of course, being in the service of the Mikado, I required no such passport, as my officers and guards cleared me at the three custom houses. I left Osaka at 6 A.M. on the 1st of May, for Kioto, by Japanese steamer, and I arrived at Fushima, which is about seven miles from Kioto, where we had tiffin at 3.30 P.M., and proceeded in jin-ri-shos from that place. A jin-ri-sho is a kind of light spring carriage, which can be covered with a hood in case of rain. I required ten in number to carry myself, my officers and baggage, and we arrived at Kioto in about an hour and a half. Each carriage is drawn by two coolies. The general speed is about six to eight miles an hour.

Kioto is one of the principal cities in Japan, and was, until two years ago, the residence of the Mikado, where his palace and that of his imperial mother is situated, both being of great extent, and surrounded by walls. Kioto is about forty miles from Osaka, and the principal trade is linen manufacture; in fact, it is the Manchester of Japan. The ground is located on a flat area, but a splendid view can be obtained from any of the numerous temples on the hillsides. The population is estimated at about one million. The exhibitions which I am about to describe were held in three temples. The first one I visited is called Kenninji. It is hardly one mile from Nakamuraiya-Juitei's Hotel, which is conducted on the European principle. The rate of charge is four dollars per day without wine, so it is rather expensive; but I only paid three dollars, as I am a regular customer of Juitei at Osaka.

Arriving at the exhibition, we purchased for one dollar three passes. To those who have been to the South Kensington Museum it will not be difficult to realize the interior of most of the rooms at each of the Kioto exhibitions. The "curio" stands proper might have been taken from the Soulages collection. The same medley of warlike, ecclesiastical, and domestic relics of mediæval times are to be found here as in their prototype in London. Owing to the absence of descriptions in European languages, more noticeable among the curios (which to the ordinary sight-seer are more wanted than even in the other departments), I was obliged to adopt the only course open to me, of asking for information respecting such articles which, from their beauty or singularity, attracted my notice. The collection would appear to a stranger to be rich in native and Chinese gold and copper coins, silver being less numerous. One of the huge oval gold coins yclept "ooban" was pointed out to me as having been presented by the Shogun Hide-yoski, who flourished some three hundred years ago, to the priests of the Great Osaka Pagado Temple, called Tenoji. In those days the "ooban" stood for ten rios; now it is

worth a hundred, and rarely to be met with. I noticed that they were all in small and shallow cases, with loose glass lids, and, if safe in Japan, they certainly would not be so for half an hour in England at any exhibition of the same kind. Near the coins is an arrow-head of iron, stated to be a thousand years old. Here, too, are several of the curious bell-like "ye-ki-de," both of bronze and of iron. These were given by the emperors to their envoys when sent on business of great importance, seemingly having the same use as signet-rings occasionally had with us in the Middle Ages. Near these last were the iron seals of a great Chinese warrior, and a small statuette of the hero himself. Musical instruments in great variety, including the "sho," not unlike a piccolo, the harp-like sounding koto, drums, and flutes in great numbers. One group of Chinese musical instruments is said to have been made during the Ming dynasty. One of a number of gongs is credited with eight hundred years' existence. From either this or one of its fellows can be produced by far the richest bass notes that ever I heard from any such an instrument. After a cup of the delicious Uji tea, I paid a visit to the bird room. A pair of peacocks attracted my attention; the price asked was eighty-five dollars. Among the varieties here are a pair of acho birds, about the size of blackbirds, but canary-colored, except a few feathers on the head and wings, which are black. They are valued at sixty-five dollars the pair. But *the* birds of the collection are a pair called by the Japanese Kin-Kamo blackbirds, rather larger than the acho, with orange bills and a bright yellow patch on each side of the head. These birds seem to repeat all that is whistled, and a good deal even of what is said to them. In the tea room are on sale sample packets of tea, from twenty-five cents each; tea-caddies at a rio each; painted and carved figures made of the wood of the tea tree, thirty-five and fifty cents each; and, most curious, perhaps, of all, pots of tea flower-buds, preserved in sugar, five cents each. There are also to be had the tea-powder biscuits. In a large wooden box are three tea shrubs; one, which is about twelve inches high by twelve inches in diameter, bears the following inscription: "Tea tree old for 7 Jears." There are also other two trees with the same mistake, which is the fault of the careless translator. Three aquaria were also there, but were all unfinished. A large water lizard, which was intended for one of them, was placed in a large tub, and around him the unconscious minnows, which are destined for his tiffin.

The adjoining contains a collection of foreign and native drugs and medicines, half-decayed tiger bones, coiled and dried snakes, cockroaches, newts, &c. Another place, not unlike a decent lumber-room, is filled with an extensive collection of seeds of all sorts, sizes, and colors; dingy screens, only one or two of which, in the absence of all knowledge of their history, appear of interest. Last of all, in a kind of outer gallery, is a small and anything but remarkable collection of plants in pots. One was something of the Currant tribe, a tolerably good Polyanthus, some Primulas, and a pretty and rather uncommon-looking red-flaked white Camellia. A basket of earth attracted my attention, and on inquiry I was told that it is a peculiar kind of mould, much prized by the native florists.

On the following morning I visited Chioin, by far the most picturesquely-situated of all the three Exhibition Temples, and, on the whole, I think the most interesting. The Exhibition is held in what, so far a I could see, is the uppermost of the many buildings which constitute the Temple of Chioin. A long and winding flight of stone steps leads from just below the main entrance of Juitei's Hotel, which latter was formerly one of the priestly residences. It is situated in the temple grounds, on the right of the Chioin exhibition building. On two sides of the Exhibition are two pretty lakes, with rocky islands and overhanging trees and shrubs, which grow in the wildest luxuriance. Upon entering the Exhibition, the first conspicuous objects were some very wide rolls of thick waxed or oiled paper. The widest of these were probably 15 feet in breadth. Most of the material was plain and of a yellowish-white color, but some were embellished with colored scroll-work, and other rolls were faintly embossed. Passing this, I entered what might well pass for the museum of some Japanese inspector of weights and measures. Here were scales, steelyards, and dry and wet measures of all sizes, ages, and descriptions. Some worm-eaten and time-worn square wooden grain measures bore dates which eft the Houganji candle quite in the shade. Here are some verbatim specimens of the English inscriptions affixed to them:

13th year of Auvo,	304	years ago.
16th year of Eisobo,	354	,,
2nd year of Kenmu,	539	,,

A pretty decent old age for a quartern measure!

Near these, two gourds, with iron frames and handles, are inscribed, "Used by Taiho." Two more gourds were marked "Great Calabash." Near here are a lot of skins, but none remarkable in any degree. A quantity of natural history specimens, as skulls of tigers, bill of ken fish, three-footed frogs, &c.; but curio of curios—"Tochin kaso"—this was marked in English, "This insect will change to grass when the summer comes." It did not look to me as if it would change to anything more wonderful than dust, but no doubt the translater knows best. From these we next encountered a lot of dye stuffs, drugs, &c. One monster is labelled "Uttkou of Corea," and was, I am told, brought from thence in Japanese craft, showing, if true, that the country is opened to the Japanese, at any rate; and finally a lot of desiccated native delicacies—sea slugs, sea weeds, and Mushrooms.

Retracing my steps, I proceeded to inspect the toilette department. Here are tooth-powders, face-powders, carnation and green bronze-lined bowls for lip-tinting, hair-pins in silver and gold, some coral-mounted and others gold-set; combs in ivory, tortoise-shell, &c.—a beautiful tortoise-shell bowl about 6 inches by 4, attracted my notice;—hair-ties, wigs, chignons (for the Japanese all wear chignons, or, at least, ninety-nine out of a hundred women), silk, sewing threads, braids and cords of all breadths, colors, patterns, and sizes. Near these are a number of musters of raw silk, the choicest being under glass—one very coarse sample of dirty yellow ochre-color is labelled "raw silk of Corea;"—a card of silkworms' eggs in a glass case, in which some of the "seed" has hatched. Leaving these, I entered upon the final room of the silk department. Here are scores of rich robes of bygone priests and princes, all heavy with gold embroidery. The walls are hung with ancient tapestry of many a wonderful design; but as there was no account attached to them I cannot give you further particulars. Here was a black gauze head-dress labelled, "a crown worn by Tako." A beautiful fan, its gold and colors as fresh as if painted but yesterday, is stated to have belonged to a former Empress. Patterns of silk concluded the Exhibition, and they were of great variety.

I have given you a short account of the contents of the first series of exhibitions attempted by the Japanese, and I must on the whole congratulate them upon their success. I am informed that they intend to attempt one in Yedo next year, which will, no doubt, be well attended by the foreign community. You will, I think, agree with me that I am now living in a country the most remarkable, and with a people the most surprising, in the known world.

THE GARDENER'S SONG.

The Gardener's is the oldest
And the noblest craft as well;
It was the only work thought fit
For man before he fell.
And though the first of brotherhoods
Our own we masons call,
That "grand old gardener," Adam, wore
The apron first of all.
And so we'll sing the gardener's song,
For that's the best of trades,
And the King of Trumps in our esteem
Shall be the King of Spades.

The Gardener is the richest man,
For all he has he *tills;*
His *stocks* are always rising,
His banks he always fills.
When other folks are saving,
He may go it without stint;
He never can be short of cash,
For he always has the *Mint.*
And so we'll sing, &c.

The gardener's lot is freest
From sorrow or disease,
His *pulse* is always healthy,
He never wants *Heart's-ease.*
And beauty blushes where he goes,
With smiles which never dim;
And *Love-lies bleeding* at his feet,
And two-lips glow for him.
And so we'll sing, &c.

ROSE SLUGS.—In the August number of the *Gardener's Monthly* we notice a communication from Capt. E. H. Beebe, of Galena, on this insect, in which the Captain states that the application of powdered sulphur upon the leaves of the rose when wet, is certain destruction to this pest. The sulphur is harmless, and will not prevent the free use of the bloom of the rose in bouquets and for ornamenting in sitting rooms.

We have used Paris Green with one part of Paris Green to thirty parts of flour, dusted on the leaves when wet with dew, with best of success. All our stock roses are preserved in this way, but the application prevents the flowers

from being used for other purposes than ornamenting grounds.—*Galena Advertiser.*

GOOSEBERRY CATERPILLARS.—Mr. William Hill, Keel Hall, Staffordshire, writing to *The Garden*, says a cure for the ravages of these pests may be found in a decoction of Foxglove:—"Get a quantity of stalks and leaves of this plant, bruise them, and throw them into a copper of boiling water, and let them simmer all night. The next morning the liquor will be the color of porter; this strength can be reduced by adding water. Strain through muslin or fine netting, and syringe with a very fine rose, if possible, letting the liquor fall on the trees like dew. If no copper is handy, use a water-barrow; pour scalding water on the Foxglove, and cover up with sacks or mats. We have used the above, more or less, for the last twenty-four years, and have always found it to answer. Some recommend Hellebore powder; this I have never tried."

LABELS.—The following method of preserving wooden labels that are to be used on trees or in exposed places is recommended in a German paper: Thoroughly soak the pieces of wood in a strong solution of copperas (sulphate of iron), then lay them, after they are dry, in lime water. This causes the formation of sulphate of lime, a very insoluble salt (gypsum) in the wood. The rapid destruction of labels by the weather is thus prevented. Bast, mats, twine and other substances used in tying up or covering trees and plants, when treated in the same manner, are similarly preserved. At a recent meeting of a horticultural society in Berlin, wooden labels thus treated were shown which had been constantly exposed to the weather during two years without being affected thereby.—*Garden.*

LARGE GRAPES.—A bunch of Black Hamburg grapes exhibited at Manchester, this past season, weighed 13 pounds 4 ounces, which, it is said, surpasses anything ever before produced in England.

PROFITS OF VIOLET-GROWING.—A Paris correspondent of the *London Gardener* writes:

It is difficult to calculate accurately the probable produce of a crop of Violets, as it is exceedingly variable. In one season 12,000 bouquets may be gathered from 2½ acres of ground, while, in another season, the same ground may not yield more than 3000 bouquets. But, usually, the profit is greater when the general crop is moderate, as, when the general crop is abundant, prices fall very low in the market, and sometimes hardly more than repay the various expenses of culture, rent of ground, &c. This will be made plainer from the following calculations on the produce of 2½ acres, during three seasons of maximum, medium, and minimum produce. In a year of plenty (say 12,000 bouquets to 2½ acres), the first bouquets of winter and the latest in autumn will fetch about 5d. apiece, and, when the full crop comes in the spring, 1d. apiece. Supposing one half the crop sells at the first price, and the other half at the second, we have:

12,000 b uquets, @ 3d. each..... £150

Against this we must set off the expenses as follows:

	£	s.	d.
Rent of 2¼ acres of ground	12	0	0
Digging and preparing the soil	4	0	0
Three hoeings, @ £2 8s. 4d. each	7	5	0
Manure	14	8	4
Spreading the manure	1	5	2
Cutting off the runners	0	16	8
Gathering, packing, and other market expenses of 12,000 bouquets, @ 1d. each	50	0	0
Total	£89	15	2
Deducting this from	£150	0	0
	89	15	2
We have a profit of	£60	4	10

If, now, we take a season with a medium crop (say 6000 bouquets to 2½ acres), these will sell at 2d. each at the lowest price, and for 10d. each at the highest, or 3000 at 2d. each and 3000 at 10d. each=£140. The expenses will be the same as in the last case, except for the gathering, packing, and other market expenses, which for 6000 bouquets at 1d. each will be £25, instead of £50. Deducting this from £89 15s. 2d., we have £64 15s. 2d., which, deducted from £140, the market value of 6000 bouquets, leaves a profit of £75 4s. 10d. Lastly, let us take a season with a minimum crop of, say, about 3000 bouquets to 2½ acres, of which 1500 will fetch 1s. 0½d. each (or £78 2s 6d.), and 1500 will sell for 4d. each (or £25), equal in the total to £103 2s. 6d. The general expenses will be still the same, except in the matter of gathering, packing, &c., which for 3000 bouquets, at 1d. each, will amount to £12 10s. To this must be added the other expenses, which, as before, amount to £39 15s. 2d., making a total of £52 5s. 2d. Deducting this from £103 2s. 6d. (the market value of the 3000 bouquets), we have a profit of £50 17s. 4d. From the foregoing calculations (taken from the *Revue Horticole*, from which this article is translated), it will be seen that the profit is greatest in seasons of medium produce, since, in years of maximum yield, the various expenses of gathering, packing, &c., are much increased while the market price is diminished to the lowest; indeed, sometimes so much that growers do not care to gather their flowers. On the other hand, in seasons of minimum produce, it is the other general expenses, which, remaining, as they do, unchanged, swallow up the greater part of the profits. It must be understood, however, that the figures given here are only approximative, and that in the previous calculations we have inadvertently omitted the cost of planting, which for the hectare (2½ acres) amounts to £2 10s. This must be added to the expense side of the account.

HORTICULTURAL NOTICES.

MICHIGAN POMOLOGICAL SOCIETY.

This Society had a good time the last week in June, at Adrian. Though a pomological society, fruits are not alone cared for. The exhibition of flowers was remarkably good, and furnished by a number of exhibitors. There were blooming Cactuses from Charles Sheffield, Roses from F. H. Lewis, Geraniums from Mrs. Sigler, and Aloes from Mrs. Luck. Mrs. Angell had vases of beautiful vines, and Mrs. P. Wickham had a fine specimen of the beautiful English Furze, at which even Linnæus almost wept over with admiration when he first saw it in that country. Besides these many beautiful plants and cut flowers were exhibited by Messrs. H. E. Owens, Charles F. Smith, J. Edmunds, John Little, O. M. Loud, B. W. Steere, and A. W. Alles; and by the following ladies: Mrs. Ira Carey, J. N. Kirtland, Mrs. Nathan Smith, and Mrs. Norman Geddes. All these contributions were made from love of the subject, and with no offer of premiums to exhibitors.

The chief subject of discussion was *orchard culture*. Mr. Childs opened by remarking that rejected orchards were numerous. Rhode Island Greening, Wagener, Steel's Red Winter, Northern Spy and Baldwin, he had found very satisfactory for that region. In preparing land should be deeply stirred and highly manured. Constant tillage, with manure and hoed crops, had been his best experience. Prof. Beal agreed with the speaker that orchards should be continually stirred, or manured, and he thought constant stirring the cheapest. Mr. Hanford deprecated hoed crops for an orchard. Had known peach trees irrevocably ruined. He did not care for continually stirring the surface, but would plow every year and sow with some broad cast crops.

In tree culture Mr. J. E. Curtiss, Division Superintendent of the L. S. and M. S. Railroad, said that that Company had planted 240 miles of continuous trees fifty feet apart,—English Larch and Chestnut. An excellent exhibition of various kinds of fruits was made, but little new; but James Dougall, of Windsor, Canada West, exhibited a fine seedling cherry, said to ripen one week earlier than Early Purple Guigne. The fruit is fair size, dark, black, sweet and juicy. The committee would recommend that nurserymen cultivate this cherry, and more fully ascertain its qualities, and if earlier, or as early as the Early Purple, it would certainly be worthy of extensive cultivation.

The great event of the day was an address on "*horticulture for the people*," by J. J. Thomas of New York. He pointed out how easily a large supply of fruits could be had from even small tracts of land with much less trouble than generally supposed,—by the poorest as well as by the rich. Three rods square of strawberries—varieties judiciously selected—would give five quarts daily for a month. So with other fruits in proportion. He showed how fast people were coming to understand this. Hundreds of thousands of trees were now set out against the mere hundreds of a few years ago. Thirty years ago Ellwanger & Barry had but six acres. In 1858 they had 400 under nursery culture. There are now 10,000 acres under nursery in the United States. Yet the trees sent from all this land per annum were but as one to every two of the in-

habitants? Good fruit sells for a higher price than ever before. There were fruit troubles—there were troubles in every thing; but these were being gradually overcome. Insects were a plague; but the curculio was being gradually mastered. The jarring remedy, in its various forms, wherever applied was always more or less of a success. He has known of 5000 curculios being caught in this way in one year; and plums by the bushel in places where before there were not a peck. The total expense was six cents per tree each year. The poor, he thought, knew more of the joys of horticulture on the average than the rich. He had known one poor rich man who built a mansion for fifteen thousand dollars, and then spent five dollars on trees at a nursery, and thought that was a waste. From the practical part of his remarks, he concluded by the following beautiful apostrophe to the pleasures of the art:

"It is too common for men to devote their whole time and all their thoughts to the accumulation of money. It is a great and common error to suppose that happiness is earned and intelligence advanced by a perpetual struggle for wealth. In this eagerness and error, men confine themselves to the office and counting room, every hour of the day, week after week, year after year, and occupy their thoughts in the hours of the night, with constant efforts for gain, and shut out from their vision the sweet sunshine of heaven and the beauty and glory of the world around them. The microscopic charms everywhere beneath their feet, and the telescopic wonders of the orbs above, are alike unseen and unheeded. The grandeur of wealth is nothing compared with the empire of beauty and glory which is given on every side, to the attentive observer; the fascination of money-making is low and groveling before the myriads of created forms which are constantly revealed to the vision. It is not necessary that the observer should be a man of entire leisure, to enjoy these scenes; an hour can be taken, morning or evening, or at midday, for the trees of his own planting, and for the flowers which are blooming under the touch of his hand. To all these, the revelations of science give a ten-fold charm. The opening buds of Spring are seen to develop a thousand microscopic wonders; he sees in every starting shoot, a structure more surprising than the greatest work of architecture; he discovers millions of minute cells in every leaf that expands to the summer sun; he sees in every tree a perfect system of circulation and supply, complex by myriads of parts, but complete in order, by which its structure is ceaselessly built up, through the intervention of cells and vessels, too minute for the unaided eye, but under the optician's glass, more perfect than the finest part of a watch, and a more finished than the finest work of the engraver—a single full grown apple tree containing within its branches more than a hundred millions of minute vessels, and having in its three hundred thousand leaves more than a thousand million breathing pores of exquisite form—delicious fruits forming on every spray, which, as they expand and ripen, become touched with the soft and unseen pencil of nature with tints of gold, or shadings of crimson; all a perpetual scene of wonder and change, without cessation by day and by night, and who that has witnessed this ceaseless rotation of life, would give them all up for the sake of poring over columns of figures and musty packages of bonds and contracts pent up within brick walls!"

FAIRS AND EXHIBITIONS.

THE NEW YORK STATE FAIR will be held at Rochester, N. Y. There are very fair premiums offered for fruits and flowers. It commences September 14th.

THE DESERET HORTICULTURAL SOCIETY was to hold its first meeting at Salt Lake City on 15th and 16th of July. The premiums offered are in the shape of stock in the Association.

THE GERMANTOWN (PA.) HORTICULTURAL SOCIETY has its annual exhibition in the Town Hall, on September 9th and 10th.

THE PENNSYLVANIA HORTICULTURAL SOCIETY holds its annnal meeting at their grand Hall on Broad Street, Philadelphia, on 15th, 16th, 17th and 18th of September. The premium list is a heavy one, and may be had of A. W. Harrison, Recording Secretary, 15 N. Ninth Street, Philadelphia.

THE MARYLAND HORTICULTURAL SOCIETY is to have an annual exhibition in Baltimore—the first for this new organization—at Lehman's Hall, on 9th, 10th, 11th of September.

THE MASSACHUSETTS HORTICULTURAL SOCIETY has also its annual exhibition some time in the same month, in Boston.

TO MARKET GARDENERS.

CABBAGE SEED A SPECIALTY.

The subscribers have, for many years, made the growing of Cabbage seed of superior quality a **specialty**, devoting close, critical, practical attention to the selection of the most approved specimens of each variety, from which, in turn, the best samples were again selected; thus, in a long series of years, establishing a character for each sort with features as distinct and unmistakable as are those of a "Durham short-horn," or a "black-faced South-down."

The Early Bloomseale Cabbage, a sub-variety of extraordinary merit, is now offered for THE FIRST TIME. It is nearly as early as the English Large York, it is hardy, stands the sun of July, does not burst speedily when ripe, is of large size, in form a obtuse cone, and is in all respects worthy the attention of the Market Gardeners of the Union.

One ounce pockages for trial (one ounce only to one address can be furnished,) at one dollar, post-paid.

DAVID LANDRETH & SON,

Bloomsdale Seed Farm,

SEED HOUSE—Nos. 21 and 23 South Sixth Street,

PHILADELPHIA, PENNA.

BOOKS FOR RURAL LIFE.

Will be forwarded by mail, post-paid on receipt of price.

Allen's, R. L., American Farm Book	$1 50
Allen's, R. L. Diseases of Domestic Animals	1 00
Allen's, L. F. Rural Architecture	1 60
Allen's, L. F., American Cattle	2 50
Allen's, R. L & L. F., New American Farm Book	2 50
American Architect	7 00
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HINTS FOR SEPTEMBER.

FLOWER GARDEN AND PLEASURE GROUND.

Attention should be given at this season to the flower-beds, by noting what has done well in your locality as a summer-blooming plant, as no time should be lost in procuring a stock for next year. The best way to propagate all the common kinds of bedding plants is to take a frame or hand-glass and set it on a bed of very sandy soil made in a shady place in the open air. The sand should be fine and sharp, and there is, perhaps, nothing better than river sand for this purpose. The glass may be whitewashed on the inside, so as to afford additional security against injury from the sun's rays. Into this bed of sand, cuttings of half-ripened wood of the desirable plants may be set, and after putting in, slightly watered. Even very rare plants often do better this way than when under treatment in a regular propagating-house. In making cuttings, it is best to cut the shoot just under a bud,—they root better, and are not so likely to rot off and decay. A cutting of about three eyes is long enough for most strong-growing things, such as Geraniums, Fuchsias, &c.

Small-growing things, of course, will take more buds to the one cutting. From one to three inches is, however, long enough for most cuttings. They should be inserted about one-third of their way under the sand, which latter should be pressed firmly against the row of cuttings with a flat piece of board,—not, however, hard enough to force the particles of sand into the young and tender bark, which is often the first step to decay. For a few cuttings, they may be inserted with a dibble ; but where many are to be put in, it saves time to mark a line on the sand with a rule or straight edge, and then cut down a face into the sand, say one or two inches deep, when the cuttings can be set against the face like box-edging. All amateurs should practice the art of propagating plants. There is nothing connected with gardening more interesting.

There is not so much enjoyment in summer as in spring flowers. After the total absence of floral beauty during winter, the spring blossoms are doubly welcome—and then the season of the year renders them enjoyable beyond anything that the heats of summer will allow. From now until November the hardy flower roots will be sought for as amongst the most interesting of spring flowers.

Unless very well acquainted with the varieties of Hyacinths and other bulbs, it is best to leave the selection of the kinds to the dealer. The best manure for all kinds of bulbs is rotten cow manure. Half rotten stable manure, or rank matter of any kind, is not good. Very rich garden soil, without manure, is better than to have this matter fresh.

Of *Tulips* there are many classes. The single dwarf varieties are very early ; the double ones of the same class come next. The Parrot Tulips, so called from the singular warty edges of the petals, are the next earliest, and then *the* Tulip so well known for its large, full cups of all colors.

The next most popular bulb is the *Narcissus*, of which there are only white and yellow varieties—but these so varied in shade and shape as to afford a dozen or more of single and double kinds.

BLEED THROUGH

The *Crocus* is another popular bulb, as there are so many shades of color, white, yellow, blue, and the many shades between, they make gorgeous masses in the spring flower garden. They have a beautiful effect when placed in clumps on the lawn, where the flowers come through and expand before the grass begins to grow. The sloping sides of a terrace are often made to blaze with beauty in this way; and besides, the extra warmth of these terrace banks, when full to the sun, make the roots flower much earlier than they will in the level garden ground. Crown Imperials have been much improved of late years, and there are now some dozen or more of varieties. But the old Red and the old Yellow are good things to have at any rate.

The *Snowdrop* is, perhaps, the earliest to flower of all bulbs, being, in Philadelphia; often out by the 1st of March. There are the double and the single both desirable—but the last we think the prettiest. They should be planted where they are to remain several years, as the after removal, as with other bulbs, is not favorable to an abundant bloom.

Persian Iris, *Ranunculus*, and *Anemone*, are very popular and beautiful bulbs in Europe, but do not reach anything like the same perfection here.

Among the miscellaneous hardy bulbs, which flower early and are very desirable, are Japan Lilies of all varieties, and all kinds of Lilies, although they are scarcely to be ranked with spring flowers—many of them, indeed, not opening till July.

The *Lily of the Valley* can be treated as a bulb by planting out beds in the fall, and will always be admired when well grown. Like the Snowdrop, however, it does not like frequent changes of locality. It prefers a good top dressing to a transplanting.

Preparing for spring, also, many flower seeds should be sown in September. The *Pansy*, especially, everybody has, as it is one of the most cheerful and loved of all spring flowers. *Wallflowers*, *Carnations* and *Hollyhocks* should also be sown. The young seedlings must be protected in winter; but this is easily effected by drawing a little earth over the plants, entirely covering them. Next to snow, earth is the best plant protector. In sowing seeds remember that, in all cases, it is best to sow on a little elevation rather than on a full level with the ground.

In many parts of the Northern States the leaves will have changed color previous to the incoming of winter, and the planting of trees and shrubs will commence as soon as the first fall showers shall have cooled the atmosphere and moistened the soil. Further south, where the season will still remain 'summer' awhile longer, the soil may at any rate be prepared, that all may be in readiness when the right season does come. When there is likely to be a great deal of planting done, and only a limited number of hands employed, planting may commence early in the month. What leaves remain on should be stripped off, and the main shoots shortened. They will then do better than if planted very late. In fact, if planting cannot be finished before the middle of November in the Northern and Middle States, it is better as a rule, deferred till spring. In those States where little frost occurs, this rule will not apply. The roots of plants grow all winter, and a plant set out in fall has this advantage over spring set trees, that its roots in spring are in a position to supply the tree at once with food. This is, indeed, the theory fall planters rely on; but in practice it is found that severe cold dries up the wood, and the frosts draw out the roots, and thus more than counterbalance any advantage from the pushing of new roots. Very small plants are, therefore, best left till spring for their final planting. The larger things, and which we recommend planting in the fall, should be pruned in somewhat at planting. The larger the tree, the greater in proportion should it be cut away.

Before the summer flowers are gone make notes of the best things to be had for next year, and arrange now what are to go in the beds then. There will then be time to get all together. A friend has a bed of the early flowering Cannas which have made a pretty show on his grounds; but last year he thought there was hardly gaiety enough with the curious leaves. He planted a few scarlet Gladiolus amongst them, and found they grew very well together. The leaves of Gladiolus hardly showed amongst the Cannas, so there was no incongruity. The effect was as if the Cannas bore the scarlet flowers. It is such ideas as these which give interest to a flower garden. So with leaf plants. The Coleus, Achyranthus, Begonias, and such like, have much the best effect in partially shady places. There are other things which do best in the sun,—such as the Cannas, and Gladiolus aforesaid.

We have said a good deal about ornamental

hedges in past numbers; but not, perhaps, as much as the subject deserves. Not only do they make the very best kind of boundary fences, and form in themselves beautiful objects, but they have a great use in small places in breaking off long and uninteresting scenery, and, by dividing perhaps one grand view into innumerable parts, make a small place seem very large indeed.

We have often given the principles of successful hedging, the main ones being to repress excessive growth at the top by repeated summer pruning and training in a conical form, while the side and basal shoots should be suffered to grow as much as they possibly will, without let or hindrance, during the summer season. As soon as the leaves begin to fall, these lowermost shoots should be brought into shape, so as to render the hedge perfect.

FRUIT GARDEN.

The greatest progress in fruit culture during the few past years, is in the knowledge that there was much of mere theory in the recommendations of old writers on fruit. That to produce the very highest excellence, special soils are necessary is perhaps true, but to the average man the soil that is good for the apple will produce pears, peaches, cherries, or any ordinary fruit sufficiently near perfection to satisfy any reasonable being. Again the expensive recommendations to dig over ground two feet deep, and spend about a couple of hundred dollars an acre before we think to set out a tree, is only practiced by those who have little practical experience. Instead of $200 per acre at the outset, it will be found to pay much better to put about twenty dollars an acre a year, as a top dressing for the trees. Fruit is generally grown for profit, and it will be found that the most profitable plan is a light annual top dressing. There is nothing that we should insist on as more essential in good fruit culture than a light annual top dressing. Trees may be set on a barren rock; but if they get a light annual top dressing, they will do all that can be expected from any trees. We read sometimes about ground being so rich in some parts of the country that the trees make a second growth in the fall. When trees make a second growth it is not from any richness of the soil. Rich soil has nothing to do with the second growths or late fall growths. If a tree is healthy it will go as naturally to rest when its time comes, in a manure heap, as in a piece of barren sand. We feel, therefore, perfectly safe in recommending for any soil or situation, an annual top dressing for trees. We have met with some orchards lately, in which excellent success has been achieved by allowing any kind of vegetation to grow up through the trees in summer, and then ploughing this mass of green vegetation under before the frost destroys it. It is ploughed no deeper than will just cover the vegetable matter. In the spring the ground is harrowed level, and nothing more done for the rest of the season. It must be remembered that the fibres of trees are like the leaves *annual*, and that early in winter most of them die. Ploughing at this season is therefore no check to the vitality of the tree, as working the cultivator through the ground in the growing season is. And then this turning down of green material saves the necessity of top dressing with manure. Some Maryland orchards that we have recently seen, that have been treated some years on this system, lead us to think very highly of the plan.

Trees that have long stems exposed to hot suns, or drying winds, become what gardeners call "hidebound." That is, the old bark becomes indurated,—cannot expand, and the tree suffers much in consequence. Such an evil is usually indicated by grey lichens, which feed on the decaying bark. In these cases a washing of weak lye or of lime water is very useful; indeed, where the bark is healthy, it is beneficial thus to wash the trees, as many eggs of insects are thereby destroyed.

The old practice of slitting hidebound Cherry and other trees with a knife, had much more sense in it, than some of our leading minds are ready to admit.

In planting pears, apples, cherries and plums, set them out as soon as they can be obtained. It is not worth while to wait till the leaves have fallen. It is always best to cut away some feet of the branches at planting; and if there are immature leaves at the end of the shoots, they can be cut away with the branches. It is a good plan to throw the earth high up against the stems in fall planting—banking them. The water from the melting snow, and the thawing of the surface crust then runs away, and prevents the thawing of ground till the spring has fully come. It is the continual freezing and thawing (alternately) that draws out trees. In planting be very careful of the names. It is half the pleasure of fruit culture to know the

names of the kinds we grow. After an orchard is planted it is best to enter them in a book in numerical order as the names correspond; but the trees also should be named, to facilitate a ready reference at all times. After trying many things, we are inclined to think the best plan is the very old one of wooden labels with stout copper wire, fastened to the labels by a notch in the end. The labels should be made of split white pine or cedar, and be from an eight to a quarter of an inch thick, painted with good white lead, and the name written while the white lead is soft. The stout wire may be looped so that when attached to the tree there will be room for the branch to swell for ten years to come, all of which at least a well-painted and well-written name of this kind will last.

GREENHOUSE.

It is very good time to look around for soil for potting purposes. The surface soil of old pasture forms the best basis, which can be afterwards lightened with sand, or manured with any special ingredients to suit special cases, as required. The turfy or peaty surfaces of old wood or bogs also come very "handy." A stock of moss should also be on hand for those who crock pots, in order to cover the potsherd; moss also comes in useful for many purposes connected with gardening, and should be always on hand.

Plants intended to be taken from the open ground and preserved through the winter, should be lifted early, that they may root a little in the pots. A moist day is of course best for the purpose, and a moist shady place the best to keep them in for a few days afterwards. Any thing that is somewhat tender had better be housed before the cold nights come. Some things are checked without actual frost.

Those who have greenhouses, pits or frames, will now see to having any necessary repairs attended to. White-washing annually is serviceable, destroying innumerable eggs of insects, in the war against which the gardener should always take the initiative; sulphur mixed with the whitewash is also serviceable. Powerful syringing is a great help to keeping plants clean, and should be frequently resorted to.

Propagation of bedding plants for another season will now be progressing actively. Geraniums, and other things with firm wood, do best in sand spread on the open ground, with a glass frame partially shaded spread over it. A great benefit will be found in most cuttings if they are placed for a short time in slightly damp moss for a few days before inserting the same, so that the wound at the base of the cutting may be partially healed or calloused over. Verbenas, and such cuttings, can be kept but a few hours, unless the wood is very hard. The harder the wood the longer they will do to keep so. Ripe wood of some things will be benefited by keeping two weeks. All this must be found out by each propagator himself.

Those who have no greenhouse, and yet are desirous of preserving many half hardy plants through the winter, employ *cold pits*. Choose the dryest situation in the garden, and sink about five feet in depth. It is important that no water can be obtained at the bottom. The pit may be of any length required, and about five feet wide, so as to accommodate six feet sash. The inside of the pit may be built up of boards, or, if something more durable and substantial is required, brick or stone. The body of the frame may be built up a few feet above the level of the surrounding soil, and the earth which comes from the pit be employed in banking up to the upper level of the frame. Shelving should be made for the inside so as to extend from the base of the front to nearly the top of the back, on which to place the plant in pots. In the space which will then be under the staging, hard wooded and deciduous plants, as Lemon, Verbena, Fuchsias, &c., may be safely stored, while the more succulent kinds are shelved overhead. The plants to be preserved in such a pit should be potted early, and be well established and healthy before being pitted; much of success depends on this. The less water they can be made to live on without withering through the winter the better they will keep. Straw mats must be employed to cover the glass when freezing time commences, and when the thermometer is likely to fall below 20°, straw or litter should be thrown over. Board shutters are also excellent, as it keeps the snow out from the straw and litter, which sometimes makes the mats very awkward to uncover when we would like to give air. Very little light or air will be required through the winter, when the plants are not growing. If a good fall of snow cover the pit, it may lie on undisturbed for two weeks or more without injury. When a warm dry day offers the sashes may be raised if convenient, to dry up the damp. Many kinds of border plants can be kept over winter in this way with little trouble.

COMMUNICATIONS.

CERCIS SILIQUASTRUM, AT THE BOTANIC GARDENS AT LEYDEN, HOLLAND.

BY A. M. C. JONGKINDT CONINCK, DEDEMSVAART, NETHERLANDS.

While visiting these gardens, in the beginning of May, I was very much delighted with the beauty of this curious, yet beautiful plant. In the above gardens there are three grand specimens, one against a west wall, and two against a south wall. The circumference of one of these, at 6 feet from the ground, is about 12 inches, the stem reaching to the top of the wall, which is from 15 to 18 feet in height. At the top of this, the branches extend to a horizontal position to the length of 46 or 48 feet.

During my visit, the whole of these trees were covered with their beautiful bloom. The flowers, which are of a bright rosy pink, are produced in bunches from the old wood, without any foliage, which has a very curious, yet beautiful appearance.

THE KINGSESSING NURSERY OF JOHN DICK, PHILADELPHIA.

BY WALTER ELDER, LANDSCAPE GARDENER, PHILADELPHIA.

In July last, I visited this commercial garden on the Darby Road. It was founded in 1837; is famous for rare and choice exotic plants. The plant houses stand upon a sloping hill-side, and have been constructed economically in regard to inside furniture. Water is introduced into them all, by hydraulic ram and pipes, from a stream which runs through the grounds. The supply is abundant, constant and clear. The glass on the roofs is much over a hundred thousand square feet. The genera, species and varieties of plants are very numerous, and the individuals are almost incalculable. Suffice it to state in brief, almost every valuable plant for bloom, fragrance, variegated foliage and curious habits, is there. The collections of Acacia, Azalea, Bouvardia, Cacti, Dianthus (carnation), Euphorbia, Fuchsia, Geranium and Pelargonium, etc., are immense. So are those of Caladium, Orchideæ, Fern, Lycopodium, Selaginella, Sempervirum, Echeveria, Sedum, Saxifraga, etc. Daphne odora, Olea fragrance, Gardenia, Jasminum, Orange and Lemon trees, Heliotropium, etc., of sweet scented plants, are largely grown; so are the various species with sweet scented leaves.

Two of the houses are appropriated to the production of cut flowers during the winter. One is 153 feet long by 18 feet wide; the other is 165 feet long by 22 feet wide. Choice ever-blooming roses are grown in natural beds, in lines, and trained upon low trellises. Shelves along the walls are for the culture of dwarf winter-blooming plants. A plentiful supply of flowers is kept up from October to June. Choice bedding plants are extensively grown. These and the cut flowers are on sale in the city store, No. 1721 Chestnut Street, which is attended to by Mrs. Dick and one of her sons.

The outdoor grounds are stocked with flowering shrubs, perennial, hardy herbaceous flowers. The reader can form an idea of the establishment when I state that there are three acres of ever-blooming roses; an acre each of Tuberose, Gladiolus, Geranium and Pelargonium, etc., and half acres of Heliotropium, Petunia, Verbena, Carnation, Lobelia, etc. Large sheds are full of various soils to make composts with to suit the natures of the various species of indoor plants.

AUTUMN WORK.

BY J. C., LANDSCAPE GARDENER, CHELSEA, MASSACHUSETTS.

There is always more or less building going on through the country, and consequently much requiring to be done, by arranging the grounds, whether it be by laying out every thing new, or remodeling an old place.

It may not be out of place to remind those having such work to be done, that it will soon be time to make the necessary arrangements for commencing, so that the hardy trees and shrubs may be planted this fall, and thereby gain a season, and by so doing the lawn could be ready to be sown down next spring, and the place have a finished appearance the following fall.

[The above is a brief hint, but a valuable one, and we give it a prominent place in this department on account thereof. We have often noted that people often lose a whole season through neglect of getting fall work along.—ED. G. M.]

HARDINESS OF THE CAPE JASMINE.

BY P. J. BERCKMANS, AUGUSTA, GEORGIA.

Please state for the information of our California horticultural friends, that in middle Georgia the *Cape Jasmine*, *Gardenia Florida*, is perfectly hardy, although the thermometer will occasionally fall to 18° above zero, or 14° of frost. Late spring frosts, when the glass will scarcely mark one or two degrees of frost, will sometimes injure the foliage, and partially kill the upper branches, but will seldom seriously damage the plant. Should the branches be injured, a severe cutting back will soon bring the plant back to its former vigor.

All the Chinese and Japanese species of Gardenia are hardy here. The *Florida* and *Fortunei* are found in every garden, either as single specimens or as hedges. The *Radicans* is often used for edging flower beds. The Radicans variegata stands the sun well, but remains very dwarf. The African species of Gardenia are sometimes incorrectly classed with the Chinese, but are not hardy, or only half hardy. The G. citriodora, if protected from cold winds with surrounding evergreens, will resist our ordinary winters, but cannot survive a temperature of less than 25° above zero. G. Stanleyana, Devoniana, Sherbourniæ, all from western Africa, must be classed as conservatory plants here, and will doubtless not prove suitable for open air culture above the frost line of lower Florida.

NOTES FROM MASSACHUSETTS.

BY TULLOCHGORUM.

I have taken the liberty to send you a meagre account of what I saw of the progress of horticulture in a visit to St. Johnsbury, Vermont. The journey by railroad from Boston was one of very much interest; the country was fresh after the recent rains, and the swelling rivers, with their fair level expanses, and high towering hills and mountains, added heightened interest and diversity to the scenery. Seldom have I seen a fairer scene, or one that reminded me more, of my native land.

Arriving at St. Johnsbury, after a ten hour's seat in the train, we were welcomed by an old acquaintance, and taken through the picturesque town to his hospitable home; and after partaking of a good supper, and a drop o' the barley-bree, we walked out to see what a good man at his business had done in the course of a few years.

Entering off one of the principal roads the gates of Thaddeus Fairbanks, one of the good and true men, and the honored head of the world-wide scale-making firm of Fairbanks & Co., we were surprised to note the beauty of the situation, and the romantic nature of the surrounding scenery. Perched on the hill-side, his houses and offices are built, and low down in the valley is seen the shops, whose gains have enabled him and his nephews to be generous and intelligent patrons of horticulture, as well as many other arts, for the great benefit of the citizens of St. Johnsbury.

The grounds of T. Fairbanks are very beautiful. Naturally, seldom do you see a more choice spot to work upon; and a few touches of the landscape gardener's art, is all that was needed to clothe with trees and shrubs the heights and hollows, so deftly made by the great landscape gardener's hand. I was much impressed with the fine growth of the Arborvitæs and Spruces, as also the Maples and other hardy trees, for it needs hardy chaps to stand a St. Johnsbury winter. These clothe the sides of the hills; and the tops of the mountains are verdant with grass; and the useful Sugar Maple—I thought it only wanted an auld castle wa', or a ruined monk's abbey or refectory—the one on the high hill-side, the other on the *fat* land in the valleys, to reproduce in Vermont the scenery of another land, where Knights and Abbots lived of yore.

After a long ramble through the grounds, admiring the bonny secluded spots for the lads and lasses, to make love in, we entered the houses where the skill of the man wha' kens his ken, is quickly seen by even the novice in fruit growing; for I would here say that Mr. Fairbanks has such a display of fine Peaches, Nectarines and Grapes from May till October, as few places in the United States can boast. The orchard houses are in no wise costly, but the superior skill of Mr. Walter Ingram enables him to give his employer fruit from his trees in tubs and pots equal, if not superior, to that grown in far costlier and less skilfully managed structures. At some of the agricultural fairs held at St. Johnsbury, the visitors were surprised to see the products of these gardens; they would hardly believe they were grown in St. Johnsbury, and thought they had come from New York or Boston, to grace the show. The number of trees in pots and tubs is large, and all looked well. The earlier trees were fruitless when I saw them; but Mr. Ingram said they had borne well. The latest trees were ripening their crops, and they looked very fine. Mr. I. has three sets of trees, an early, an intermediate, and a late set. He starts in January, March and April, and so has the succession from April to October. Some idea may be inferred of the trouble and care of forcing the peach, from the fact that the snow may bank up the roofs of the houses for days, when they are in bloom, and the absolute necessity of a free circulation of air during the critical period of setting is very difficult to secure, more so when the temperature outside is down to 25° or 30° below zero.

The crop of grapes was very good, and did credit to Mr. Ingram's skill; as also the crops of native grapes, for they have to be grown inside, at least they are here. The Iona does well grown under glass as also the Creveling and Delaware—in short, the peculiar experience of fruit growing under difficulties can only be appreciated by those who have gone through the mill in the climate of St. Johnsbury, Vermont.

In another article, if this is counted worthy of a place in the *Monthly*, I will try to describe Mr. Horace Fairbanks' place, and also Mr. Franklin Fairbanks'—both worthy.

RED WARRIOR AND YATES APPLES SYNONYMS, ETC.

BY P. J. BERCKMANS, AUGUSTA, GEORGIA.

Mr. Downing's reply in July number of *Gardener's Monthly* is correct. The Nickajack has the name of Red Warrior as one of its synonyms, Yates is cultivated in portions of central Alabama under the name of Red Warrior. Hence we have no apple properly called Red Warrior.

Our nomenclature of Southern fruits is confused, and needs thorough sifting. The large number of synonyms is due partially to the lack of pomological knowledge, and partially to the existence of several types of fruits which reproduce themselves almost invariably from seed. This fact is most apparent among peaches, where the distinct types of *Lemon Cling*, *Heath Cling*, *Indian*, have given to those varieties endless lists of synonyms wherever they were reproduced from seed by persons unacquainted with fruit culture. The Columbia peach is a fair instance of this faculty in reproducing itself more or less identically. Coxe, who raised it in New Jersey, received the pits from Columbia County, Georgia, where this variety had been known for years as the "Pace" peach. In middle Georgia it is known as the "Tinsley" from the name of the person who raised it from seed there some twenty or thirty years ago. For Louisiana it bears the name of *Creole*. In parts of Alabama that of *St. Stephens*. In others it is generally known as Yellow Indian, Mulatto, etc. Lately it was reproduced in Missouri, and there called *Amelia*, which led to some confusion, as a peach of that name, and of a totally distinct character, was already well known south, and had been described by Mr. Downing. Whole orchards are formed here where every tree is a seedling from the Columbia, and where there is scarcely any varieties from the parent.

Among apples there are also certain types which are similarly reproduced from seed. The Nickajack is perhaps the best example; next we have the Horse, the Greening, the Red June. Many of our best Southern apples are seedlings found in old Indian settlements, where the method of perpetuating a fruit by grafting was unknown. In these old orchards certain strains seem to belong to all, whether found in Alabama, Georgia or North Carolina. The early settlers of these Indian portions of the above named States, named and diffused these apples, and not having the benefit of the pomological knowledge of these latter days, local names were applied, and multiplied according to the number of hands they fell into. This fact we stated to Mr. Downing years ago, and is found in the last edition of his great work, when describing the Nickajack.

To the thirty-six synonyms given to this apple many more could be added. Some three years ago a new apple was disseminated in southern Alabama under the name of *Spotted Buck*, and although it was proven that the tree was a seedling, it bore nevertheless true Nickajack apples. The "Greenings" also are often reproduced from seed without variation. As to the "Horse apple," it is almost as regularly reproduced from seed as are potatoes from tubers.

These facts must make the revision of our first list a laborious undertaking, and can only be accomplished by establishing pomological clubs throughout the country, that notes may be compared, and a correct nomenclature arrived at. In the North and West, new fruits advertised in nursery catalogues, without having previously been passed upon by horticultural societies, are not apt, now-a-days, to become speedily popular or diffused,—the farmers and fruit growers have thus some safeguard on their purchases; but n

sparsely populated districts, where such associations cannot be easily established, or where the spirit of progress is slow in its move, local names and confused nomenclature must necessarily continue until knowledge becomes more diffused, and fruit growers must expect to suffer from this state of things.

OUR NURSERIES.

BY AN OBSERVER.

A writer in your June number seems to have a very poor opinion of American nurserymen. "Our manners," he says, with exceptions few and far between, are small concerns, evincing but ordinary skill in rearing bedding plants, and flowers for bouquets, but no enterprise of a higher order. Is this so? Where is our old friend Mr. Buist, and Messrs. Hoopes, near Philada., the Messrs. Parsons, and Mr. Cadness, of Flushing, N. Y., Mr. Such of South Amboy, Messrs. Maxwell of Geneva, Messrs. Ellwanger & Barry of Rochester, Mr. Menand of Albany, Mr. Saul of Washington, and Messrs. Hovey Co. of Boston, Massachusetts?

In a literal sense it is far "between" these, but we don't think the number very small, nor the character of these collections beneath notice. Where did many of the finest plants come from? Who raised Camellias Jenny Lind, Sarah Frost, Wilder, Abby Wilder, Mrs. Anne Marie Hovey, etc., acknowledged to be among the best; and who raised Thuja Hoveyi, George Peabody, Tom Thumb and Queen Victoria? Who raised Bouvardia Vreelandi? Who raised Queen of the Prairie, Baltimore Belle, Gem of the Prairies and Mrs Hovey roses? Who raised Geranium, Pride of Mount Hope, Orb of Day and General Grant? Who raised the Double Chinese Primrose, Mrs. John Saul? Who raised Lilium Melpemene? Who raised the Wilson, Hovey Seedling, Chas. Downing, Boston Pine, Nicanor and other strawberries? And who raised or introduced the Concord, Eumelan, Hartford Prolific, Framingham, and other grapes.

Truly Mr. T. W. P. must live in some remote corner of Uncle Sam's domain, that it is not "worth the hide of a buck to see the improvements in hardly a private place—a so-called gentleman's place—or his" collection of plants. That many of our nurserymen might show more enterprise there is no doubt, but that many of them have not shown enterprise of a high order, the above list refutes the story.

ÆGERIA.

BY J. H. CREIGHTON, LANCASTER, OHIO.

It is well known that the Ægeria exitosa is the great enemy to the peach tree. I desire to make a suggestion or two with regard to this insect. I notice they are few in number, especially the females. There is, perhaps, ten times as many males as females, the latter being known by a yellow ring or stripe round their hinder parts, while the male is entirely a Prussian blue color. You may pass through the largest peach orchard, and will not, in a whole day, see more than one or two, and sometimes none. But if you will visit a milk weed, or cluster of them (Asclepias Cornuti), when in full bloom, about July 10th or 20th, you will find plenty of Ægerias,—not many females, but more than you will ever see any where in a lifetime. I think the same may be said of a Parsley bed, when in full bloom. My suggestion is that this is the time to kill them. I should like to have information from others on this subject.

AQUILEGIA CHRYSANTHA.

BY FRANCIS PARKMAN, JAMAICA PLAINS, MASS.

To-day, August 1st, this splendid Aquilegia is in full bloom, and a great number of flower-buds, in all stages of development, promise a continuance of the bloom for several weeks. Last season there was a succession of flowers till far into September, so that the plant seems to deserve the title of "perpetual," or at least of remontant." The blossoms begin to appear about the time when those of most other columbines are fading. At first the bloom is moderate, but it continues to increase, till at the climax, the whole plant is covered with bright golden flowers. In shape and size they are much like those of A. cœrulea, with the same long and slender spurs, and the same graceful balance on the stem. Altogether, Aquilegia chrysantha, or the "Golden-flowered Columbine," is the finest new perennial that has appeared for a long time. It seems as hardy as the hardiest of its race, and as vigorous in growth as the best of them.

In connection with its perennial habit of bloom, we may observe, by the way, that it is not the only one of the Aquilegias which has this very desirable quality. The true A. Skinneri has it also. We say the true one, because nine-tenths of the seed sold under its name produce another species, with little to distinguish it from our native Columbine, A. Canadensis. The true A. Skinneri is half red and *half green*. Its bloom begins at the same time with that of the Golden Columbine, and continues, more or less, till autumn. At present it is full of flowers, when most of the family have shed their seeds.

THE CALLA LILY.

BY WILLIAM SUTHERLAND, FLORIST, PHILADA.

Calla Lilies, Orange and Lemon trees, must be especial favorites of the fair sex, judging from the innumerable questions asked us by our lady patrons, in regard to their cultivation, time of blooming, etc.

Thinking that some of the fair readers of the *Monthly* would like to have some information on the subject, I give them a few notes below:

The Calla Lily (Richardia Æthiopica) was first introduced into Europe from Africa, about the beginning of the present century, from which time it has been cultivated with more or less success all over the civilized world, until it has become one of the most popular flowers we have—not only for growing as a window plant, but also as a bouquet flower—thousands of the flowers being used by our bouquet makers annually; in fact very few large bouquets of any pretentions are now made up without them, and most of our cut flower growers have a succession of the blossoms the year round, receiving from ten cents to twenty-five cents for each flower, according to the time of year demanded, etc.

There are some four varieties of the Calla in cultivation—two with green foliage, and two with ornamental leaves—besides our own native variety, all requiring about the same treatment, and resembling each other in the shape of the flower, but differing somewhat in size and shade of color. Strictly speaking, what passes for the flower, is only the spathe or sheath that envelops the flowers, the true flowers being clustered together on a short stem in the middle of the sheath, those at the base being pistilate; those on the upper portion of the stem being staminate

Richardia Æthiopica, the old Calla Lily, grows from two to three feet in height, the leaves being green and the stalks of a brownish color, the sheath pure white on both sides.

Richardia Æthiopica nana, a dwarfer variety of the above; the spathes or sheaths are smaller, and can be more readily used in bouquets, etc.; the same color as the above, alike on both sides, sometimes of a green shade in the centre. This is easily distinquished from the above by its bright green stems.

Richardia variegata grows about one foot in height; its leaves beautiful, veined with white. This variety must be extremely scarce, as I have seen it in no other collection besides that of the late B. A. Fahnestock, of this city.

Richardia alba maculata grows about one foot in height, resembling the preceding variety in style of growth, shape, etc. Its leaves are beautifully spotted with long white spots, as if some insect had eaten the green part out in patches. The spathes are small, and shaded with purple in the middle.

Richardia palustris, our native variety, grows about one foot in height. Its leaves are heart-shaped, and the spathes, which are white on the upper side, and green on the back, spread away from its clustering flowers. This variety forms no bulb, but can readily be grown from its long and jointed fleshy roots; it also bears a conspicuous cluster of red berries in the fall.

While the Calla Lily is not very fastidious as to soil, etc., I have found it to do best in a rich, sandy loam—say about equal parts of loam-sand and well-rotted cow manure. When growing, it should have abundance of water. For this purpose it may be grown in pots, standing in pans of water, or its roots entirely or partially submerged. In this way it can be grown in fountains, and other bodies of water. When done blooming, it should be dried up until all the leaves fall off. For this purpose the pots containing the plants may be laid down on their sides in any dry place, where, after resting a month or six weeks, the bulbs should be shaken out of the old earth and re-potted in fresh soil. Removing all small bulbs and side shoots, reserve only the strongest bulbs for flowering. Water sparingly until they begin to grow, when they must have a more copious supply. They generally begin to bloom about four months after being potted.

But as my article is getting rather long, I must reserve my notes on Orange trees, etc., until another time.

BASKET PLANTS.

BY W. F.

Before referring to the plants, I may state that I have confined myself to what I consider plants suitable for suspended baskets. The basket-like

vases, made of split wood, and set in the conservatory or flower garden, I regard as true vases, therefore I speak of them as such. Baskets are very various in form and design, some being made of earthenware, some of wood, and others of wire, the last being my favorites. Their form and material of construction are simply matters of taste, but I would suggest that the baskets be made with a greater view to the well-being of the plants to be grown in them than to their own ornamentation. When the plants grow luxuriantly, they almost or entirely hide the baskets; then, what is the advantage of costly and decorative ones over plain, but serviceable ones? Sufficient means of drainage should in every case be provided, especially as regards the close-sided bowl-shaped sorts, for when the woodwork is open, or wire-netting used, nothing short of very bad filling could insure bad drainage. Line the inside of wire baskets with a layer of sphagnum, within which put the soil; when filling and planting is finished, take a shears and clip off evenly the ragged sphagnum. As regards the baskets most suitable for the parlor, I would recommend the close sided kinds that have little drawers at their base for holding the spare water, and thus preventing it from spilling on the floor. These drawers should be emptied daily when the parlor is being cleaned, and before the flowers are watered again, otherwise an overflow and spilling may be the result. The soil to be used just depends on what the owner has convenient; indeed I think many foolish composts are advised for plants. Some people recommend two parts of loam with one of dung, for a class of plants, and others may use some peat and leaf-soil besides, for the same subjects, which, in both cases, may equally luxuriate; then we are at a loss what to choose.

I find that most plants grow well in good loam —turfy, if to be had—and a little leaf-soil or light decayed manure added. Peat I do not consider a decided necessity for any genus of cultivated plants, exclusive of Ferns and Orchids, and even many of them grow well without it. Rhododendrons are considered peat-needing plants, but the Messrs. Lane & Sons, England, grow hundreds of thousand of these in the very best of health, and the most floriferous condition, in the pure sandy loam of Berkhampstead Common, where there is not a particle of peat. Leaf-mould is a good substitute for peat, and it is nourishing, open, and liked by most plants.

I am no advocate for mixing sand in the compost; in fact I partially agree with Mr. Crouchen, the great succulent plant grower, who considers sand in many cases a plant-killer. It is useful in propagating for very young plants, and for some Ferns, Lycopods, Orchids, Heaths, etc.; but for general plant culture I depart from the opinion and practices of my apprentices and journeyman masters, who thought its presence a necessity. Clayey soil should not be used, or anything that is clammy or binding. Make the soil sufficiently fine by chopping, or breaking between the fingers, and avoid the use of the sieve. Cast away worms, stones and sticks. Place some of the roughest of the material or a thin scattering of sphagnum over the crocks to keep them clean, and in good working condition.

Examine the baskets every afternoon, in order to supply their wants as regards water, and use rain water in preference to any other. If the soil becomes very dry, steep the basket in a tub or pail of water, otherwise the inner portion of soil may be quite dry even after frequent applications from the watering pot. If the watering be done in the morning, and a hot, sunny day ensuing, the water soon dries up without doing much good; but if done in the afternoon it will remain in the soil till next day at least, and then give full benefits to the plants. When water is given, give it abundantly, and don't scruple about using the syringe to clean off dirt or insects, or gently to refresh the plants. About 4 P. M. is a good time for syringing.

The arrangement of the plants in the baskets is entirely a matter of taste; but care should be taken to have a good permanent subject in the centre with dwarfer plants, or trailers surrounding it. Little specimens of Myrtles, India-rubber plants, stiff Ferns, Palms, Crotons, Dracænas, Cyperus, Acalypha tricolor, Zonal Pelargonium, or in fact any thing there is to spare may be used as a centre.

Abutilon vexillarium variegatum.—A free growing greenhouse plant with pretty yellow blotched leaves, and numerous short stalked red flowers, the visible portion of the corolla being bright yellow. This plant may be used advantageously in large baskets amongst other plants, as alone it would have a naked appearance. It is readily increased from cuttings of the half-ripe wood. Small plants of this Abutilon make fine edgings for flower-beds if pegged down, and in this way they are much used in the London parks.

Achimenes.—No one who has seen the immense baskets of these at Chatsworth, England, the seat of the Duke of Devonshire, could fail to be surprised at their splendor. There in the Victoria Regia house, and suspended from the roof over the spacious tepid-water tank, are large wire baskets filled with Achimenes that grow with such dense luxuriance as to form specimens six feet in diameter, one mass of flowers, and completely enveloping from view top and bottom of the baskets. Such samples of culture, however, are too clumsy for the general public, and I will therefore give the method practiced by the fine old London firm of Osborn & Sons, that now directs attention to house furnishing or floral decorating. Ten or twelve inch wide wire baskets are chosen, and the Achimenes planted therein in the bowl and between the wire meshes, the plants being previously started in pots. The baskets are then suspended in a warm greenhouse, and daily syringed in the afternoons. As the plants grow they are pinched, to induce laterals, which are also pinched, and this pinching is continued till a perfect circular thicket, nearly three feet through, is produced, when they are permitted to come into full bloom. They are stove or warm greenhouse plants, propagated as freely as Verbenas from cuttings; but the usual method is by means of their scaly tuberous "roots." Completely rest them in winter, and start them in heat the following spring. A few good sorts for basket work are Longiflora alba, L. major, Mauve Queen, Vivicans, Stella, Argus, Leopard, Eclipse and Pink Perfection.

Æechynanthus.—Most of the cultivated species of these may legitimately be grown in baskets in the stove, and they thrive best in a moist, shady nook. I have seen Æ. Lobbianus cover the most of the back wall within a stove in Messrs. Veitch's Nurseries, Chelsea. They are very free flowering, having long-tubed or club-shaped fleshy flowers of a red or crimson shade of color. Their leaves are also fleshy and stems pendant, and in their native habits they are of epiphytal character, being chiefly found growing on trees. They like an open spongy soil, and they are easily increased from cuttings. I like to see them sole occupants of small baskets. A few of the best are Æ. speciosus, Lobbianus, Longiflorus, Bicolor, Javanicus, Cordifolius and Pulcher.

Asystasia.—When at Kew some years ago, we had a very fine basket plant of this genus, but I forget its specific name. It was a herbaceous plant with fragile stems, that depended some twelve or fifteen inches below the baskets, and thickly laden with whitish funnel-shaped flowers. We grew it in the tropical aquarium and stoves.

Begonia glaucophylla scandens.—This is decidedly one of the best of plants for growing alone in a suspended pot or basket. I prefer the pot. It produces quite a compact drapery of green, depending for some twenty inches below the pot, each branch being tipped with a cluster of bright red, waxy flowers. The finest specimen I ever saw of it was at Mr. Such's nurseries, South Amboy, N. J.; but Mr. Taplin complained to me that it did not flower so freely as he would wish, but always kept on growing. This is quite contrary to my experience of it, as we got a plant of the same from Such's some two years since, and so determined is it to bloom, that it is with difficulty we can get a cutting from it. It is partial to a stove or warm greenhouse temperature. This is the only Begonia that I can confidently recommend for this purpose, for no matter how fine the numerous other species and garden hybrid may be for pot culture, they are unequal to this one for basket work.

Cissus discolor.—A climber or trailer of good constitution, its leaves being extensively colored. It is an excellent subject for large baskets in stoves, but for window or coolhouse work it is not very satisfactory. It propagates so readily from cuttings, that every joint will make a plant. It requires partial rest in winter, and at no time to be subjected to a temperature under 40° or 45°, to be cut well back in the late fall or winter, and started in a brisk temperature in spring. Under ordinary circumstances, the best way to grow this plant is to train its shoots on strings along the inside of the sashes, and then leave it till it has nearly finished growing, when the strings may be cut and the vines trained around a trellis.

REASONS FOR TRANSPLANTING EVERGREEN TREES IN AUGUST.

BY W. C. STRONG, NONANTUM HILL NURSERY, BRIGHTON, MASS.

1st. It is a leisure month, and more care can be given to the work than is possible during the hurry of Spring.

2d. The first choice of trees is obtained at the Nursery, which is an important consideration for some varieties.

3d. The effect produced by the foliage during

the Fall and Winter is often a most desirable gain in time.

4th. There is greater certainty of complete success in planting than at any other season of the year.

A brief consideration of the nature of Evergreens will show why the success is so uniform with trees transplanted from August 10th to September 20th. As their name implies, they are always in foliage, and consequently are always demanding a supply of sap from the soil. If a spruce tree is planted in March or April when the ground is wet and cold, the roots will remain inactive while the dry winds are searching through the branches, and in order to supply the evaporation, the leaves are making a severe and oftentimes fatal draft upon the sap of the tree. The case is still worse when a tree is transplanted late in the fall, for the roots cannot take hold until the ground becomes warm, and yet the leaves are in action to some extent, even in midwinter.

It would therefore seem essential to plant at a time when the roots can speedily move and obtain a supply for the demand from above In May the ground is becoming warm and the roots form rapidly. It is therefore a good month for planting. But the young growth in June is soft, the days are hot, evaporation is excessive, and, as a consequence, transplanting is usually a severe check. In August and early September the conditions are more favorable. The ground is warm and not too wet, while the air is cool. This is the precise rule for propagating plants and trees by cuttings, *i. e.*, a slight bottom heat for the formation of roots, while the top is kept cool. It is surprising and beautiful to see how soon the numerous white roots begin to start. The growth of the season being pretty well matured, evaporation is by no means as excessive as it is on the succulent growth, during the heat of Summer. Consequently the roots are able to obtain and yield an ample supply of sap for the immediate demand, and also provide for the drain of Winter and Spring. Thus much of theory. Early Fall planting of Evergreens has not been generally practiced, simply because its advantages have not been understood. But in all cases where it has been tried, the testimony of success is uniform and emphatic.

A very marked, and the severest possible test, was made by myself in September, 1870. Having about 40,000 Hemlock, Norway Spruce, Pine and Arborvitæ, in various sizes, to remove a distance of over half a mile, I pursued the work for a fortnight of the hottest and dryest weather experienced for the past forty-six years, and which was followed by the dryest autumn on record. Yet the result was that scarcely one tree in a thousand was lost, and the field is now in more luxurious growth than trees which have not been removed. Such an extended and unusually trying example, resulting in the highest possible degree of success, is alone sufficient to prove that the months of August and September are eminently the months for planting Evergreens.

THE CACTUS.

BY F. W. POPPEY.

The traveler, when emerging from the primeval forests of Guyana and entering the pampas of Venezuela, will find the scenery changed. The rich verdure that covered the soil has disappeared, hot is the surface and in the crevices of the cracked ground appear the gloomy forms of the Melon-Cactus armed with frightful thorns. Further up the Andes the ground is almost covered with the pale grayish-green balls of the Mammillarias, amongst which the Old man—Cereus senilis, is standing, the gray hairs hanging from its serious head. Descending into the plains of Mexico, where the gigantic ruins of the Aztec castles give evidence of a remote and vanished culture, we perceived a scenery spread before the eye, melancholy, bare and dead, as if roasted by the scorching sun of the Sierra caliente. Dull grayish-green, branch and leafless rise, from twenty to thirty feet high the angular pillars of the Torch thistle-Cactus, surrounded by an impenetrable hedge of the Indian-fig or Prickly-Pear, covered with dangerously hurtful spines, whilst all around are seen groups of the strange and ugly forms of the Echinocactus and small Cereuses, between which seem to keep, like poisonous reptiles the long dry stems of the large flowered Cactus, Cereus nycticaulus. In short, on the whole journey we are accompanied by a family of plants, which in their odd forms seem totally to abnegate the principle of beauty and yet stand forward so prominently as to give to the whole region its peculiar character. We cannot forbear granting them our earnest attention and as a group of plants which seem to revolt against the laws all the rest of the vegetable kingdom they certainly deserve our interest to a high degree.

All about these plants is not less wonderful, than it is peculiar. With the sole exception of the genus Peireskea, none have leaves; for what is commonly supposed to be and called leaf with the Cactus alatus or the Opuntia is but a flattened stem or trunk, more or less fleshy, covered with a leathery skin and where the leaves, if there were any, would be, we find instead, bundles of hair, spines or thorns.

Few families of plants are confined to so narrow a space on the surface of the earth as the Cactus. All of them are perhaps without a single exception, natives of that portion of our continent, which is situated between 40° S. L. and 40° N. L. All prefer a dry soil, exposed to the full rays of the sun, which circumstance strangely contrasts with the fleshy texture of the trunk, filled with a watery subacid juice, not disagreeable to the taste. This peculiarity renders them invaluable to the thirsty, languishing traveler, and Bernardin de St. Pierre very appropriately called them: "the springs of the desert." For in the dry season, when all animal life has fled from the Leanos, when the boa and the crocodile sink into a death like sleep, the wild asses and mules alone know how to sustain life by availing themselves of the providential Cactus. Cautiously, with their hoofs they rub off the spines, split open the large Melon-Cactus and then suck the cooling, refreshing and nutritious juice. What nature denied them in form of body she gave with liberal measure in the shape, color, and perfume of their flowers. Who has not been delighted with the blossom and its odor of the Night-blooming Cereus? But it is not only the charm of their flowers, that gladden our sight, nor the cooling juice, that refreshes the thirsty creature, which make these curious children of nature an object of interest; it is also their manifold economic usefulness.

Almost all the Cactuses bear eatable fruit and some are amongst the most delicious of the hot zone, in which alone they fully mature. Their fruit might not improperly be considered a higher order of Gooseberries, which they, in botanical view really are nearest related to. Though the trunk originally is fleshy and juicy, in course of time it hardens into wood, which is both firm and light. Especially the long pillow-shaped Cereuses are in this respect very convenient to the weary traveler in those timberless deserts, to light up the night and bake his Tortilla. From their being used as torches their name Torchthistle is derived. On the Hacienda de Antisana, perhaps the highest inhabited spot on earth (12,000 feet above the level of the sea) the beams, posts, &c., are of this wood, which with its lightness could be carried thither, on the back of mules. In Mexico, in the South of Europe, the North of Africa and especially on the Canary Islands the Opuntia, the common prickly Pear of Texas and New Mexico, is effectually employed for hedges, which with their thorns present a formidable barrier to every intruder. And here we might mention the fact that it is this plant, the Opuntia cochinellifera, upon which that precious little parasite the Cochineal (coccus cacti) lives. In Brazil, Spain and Corsica but principally around Oaxaca, Tlascala and Guanaxato are extensive plantations, called Nopoleros, on which the Opuntias (Napal) are cultivated for the production of the Cochineal, which gives us the Carmine. The breeding of the Cochineal introduced on the Canary Islands in the year 1833 permitted in 1859 an export of this very light article of 1,369,000 lbs. at $1.50 per lb.

For medicinal purposes also, both the fleshy stem and the fruit is frequently used by American and Mexican physicians. A considerable amount of oxalic acid contained in the stem of this vegetable may be extracted from it. The Peruvian, and the Old man Cactus yield about 85 per cent. oxalate of lime.

This short view may suffice to account for the interest this plant has so deservedly met with, by the naturalist, the economist, and for its apparently abnormal organization by the natural philosopher.

EDITORIAL NOTES.

Fruit Notes from New Jersey.—The Horticultural Editor of the *Country Gentleman* has been roving around among the berry growers of New Jersey and the result is some very interesting notes, from which we select.

"William Parry has an avenue of half a mile bordered, at a distance of several rods on each side with broad belts planted with a general collection of hardy trees. Among those first planted by him are tulip trees now about two feet in diameter.

"Every new fruit which comes before the public is thoroughly tested on these grounds—not in small quantities which may afford only a partial trial, but in sufficient numbers and breadth to give a thorough test. Few men,

therefore, have a more accurate knowledge of market sorts as adapted to this particular region of country. He has also given some attention to different modes of culture. He showed us a vineyard, which after several years of clean cultivation, had been seeded to grass by way of experiment. The soil is rich, and the grass is kept mowed short.

"The new Strawberry which has proved most profitable for the market is the Monarch of the West. Its great value is its size, being fully equal to Jucunda at its best. The plant is a strong grower, and bears well. In flavor and color it is only moderate. When first sent to market it sold at twenty and twenty-five cents per quart, while Wilson brought only half that price. With extra selection it has sold as high as a dollar per quart. Its large size admits of very rapid picking. A woman who was a skillful picker filled sixty quarts in two hours, or at the rate of a quart every two minutes, being nearly a bushel per hour. In one instance, two pickings, on the 15th and 18th of June, gave 2,992 quarts per acre.

"Mr. Parry, as well as many of his neighbors, cultivates the Raspberry extensively. The Brandywine is more generally planted than all other sorts together. It is like the Wilson among Strawberries. It has several advantages. It is rather dwarf in growth, requiring no pinching back, nor any staking. It usually grows about two or two and a half feet high. It is quite hardy, very productive, and the rather dry and seedy berry admits of its safe carriage to market. Its bright red color helps the sale. In price it stands between the cheaper blackcaps and the higher priced Antwerp varieties. The Herstine, more recently introduced, sells at much higher rates, and although rather soft, may be easily carried a few miles to city markets. When the earliest berries of the Herstine ripened, they sold for 70 to 80 cents per quart, at the same time that Brandywine brought 60 cents, and the caps only 20 cents. When berries were more common, the Herstine sold at 50 cents, Brandywine at 40 cents, and caps at 18 and 20 cents. The latter are usually so low priced that they are not profitable; the Philadelphia is next in value, then the Brandywine, and lastly Herstine."

Mr Collins' Blackberry patch is spoken of in detail.

"This blackberry farm of eighty acres was bought some ten years ago for sixteen thousand dollars, or two hundred dollars per acre; and we infer that the crops have already paid for it a number of times.

"In the same neighborhood is the 150 acre fruit farm of Samuel Decou, on which we saw two or three acres of Houghton's Gooseberry, which he has found eminently profitable, much more so than currants, the berries being picked and sold when green. He thinks the Victoria the best currant for market.

"We have given some high figures with regard to the profits of the berry crop, but our readers will hardly need reminding that there is a reverse to the picture. The crops are liable to various accidents and disasters, even after the cultivator has given every possible attention and the best culture. A field of several acres was shown us, which an experienced and skillful cultivator of the strawberry had rented for his crop. It was a handsome piece of land, apparently of excellent quality. Last year it was planted to Strawberries. But before the present bearing season had come around a large portion had died, and those that remained bore little or none. It was a complete failure. A part of the field had been plowed up in spring and planted to potatoes, which appeared to be growing finely. No assignable cause had been discovered for this failure.

"A defect has made its appearance in the Wilson blackberry, and has been increasing. This is the development of double blossoms, all of which are sterile. At first only a few will be observed on a bush; the next year the whole plant may be covered with them. Some of these were shown us, containing no berries, standing in rows where most were bearing profusely, without any apparent difference of soil or vigor of growth.

"Hail storms have destroyed some valuable crops. In 1873, William Parry had forty acres of blackberries and thirty of raspberries, the crop of which he had just begun to gather, when a terrific hailstorm (which we noticed last year in the *Country Gentleman*, destroyed the whole—both crops and canes—and many of the latter, being in a growing state, were killed outright, while the new canes this year's crop, being cut down, the disaster is of two year's duration. Mr. P. estimates his loss last year at $20,000, and this year $10,000 or $12,000."

Catalogues of Ellwanger & Barry, Rochester, N. Y.—We have before us a set of three of these, which taken together, probably exhibit a greater variety than can be found in any other establishment *in the world.* Many European establishments are full in some specialty. These excel in everything.

Public Squares.—We did not suppose English horticulture had much to complain of in the way of public squares; but here is what the *Garden* says of one in London:

"We have throughout fought against the practice of placing costly fountains in our gardens, public or private, as being an objectionable way of allowing architects and sculptors to fritter away money which ought to be devoted to pure horticulture. The last water-squirting arrangement, that around the feet of Shakspeare in Leicester Square is, however, the most puerile and lackadaisical thing ever perpetrated. So we say again to all who seek for natural beauty and quiet grace in a garden, avoid the 'garden architect,' who offers you stone and water jets instead of grass and trees, and flowers and peace."

However, it is something that one can venture to a public square even for the purpose of criticism. In most of our American cities we carefully avoid taking a cultivated European in to look at our "squares." At least this is so in Philadelphia. It was a matter of necessity for us to go through Franklin, Independence and Washington Squares lately. Thedirt and filth would have been inexcusable even in the Five Points of New York, or in Alaska street, Philadelphia. A huge pile of reeking manure from the gathered leaves and grass of the square met us full face as we entered one of the principal gates at the Washington; and in the Franklin, docks were going to seed round the fountain, and weeds, and dirt of every description prevailed. Independence Square is such a terrible disgrace, that Councils purpose to spend $2000 to "make it look nice for the Centennial." The trouble is that no one whose knowledge is equal to the occasion, gets among the office-holders of large cities. Those who rule have no idea where to look for advice, no matter how well intentioned they may be. The "people" are often roused to attack "corruption," but in these works of taste we fancy it is rather ignorance than dishonesty which makes things as bad as they are. And there is no help till the people themselves are horticulturally educated.

Transplanting the Larch.—Mr. S. T. Kelsey, who has had considerable experience in western tree planting, writes as follows concerning the Cottonwood, and of transplanting the Larch, in the *Kansas Farmer:*

"I have been testing the different varieties of poplar for several years, and I fully agree with Mr. Elliott, that the cottonwood is superior to any other poplar for planting in Kansas."

"The silver leaf poplar makes a rapid growth, but the sprouting is very troublesome, and it does not make straight timber."

"The Wisconsin poplar (Populus Granidenata) seems to be of little value here."

"Mr. Elliott also says, that his experience with the European Larch is not in its favor as a tree to be largely planted in Kansas. My experience with the European Larch is, that it is very difficult to handle and transplant, and a slow grower for the first two years at least. I therefore agree with Mr. Elliott, but would recommend to those who have the means, and wish to experiment, to plant early in the spring before the buds start, handle carefully, and if dry, mulch thoroughly."

The same difficulty used to be experienced with the Larch when spring planted in the East; but it has been found to be the safest of all trees for autumn planting. Not one in a thousand die. In order to aid against being drawn out by frost, the earth should be mounded about the roots. Small trees of course can hardly be prevented from being drawn out, and should not be set till the spring; but those intending to plant them in spring, should get them in the fall and bury them just under the earth. This keeps them back a little in spring; but they should be set out early as practicable when the spring opens. The losses are very few when so treated.

American Lilies.—Our Lilium superbum, L. cavadence, and L. philadelphicum, are all highly prized in England. They are as beautiful as many Asiatic species, and are worthy of greater home culture.

Horticultural Education. Says the *Garden:*

"In order to encourage a taste for horticulture among the young, the Royal Horticultural Society has caused a number of bronze medals to be struck, for presentation among the successful exhibitors at the flower show of St. Botolph's, Bishopsgate, which has been long so ably conducted by Rev. W. Rogers. This is doubtless a step in the right direction, and let us hope that the 'Lindley Medal,' awarded on more than one occasion, may also be struck and forwarded to those to whom it has been awarded."

This is the right track. The Pennsylvania Horticultural Society is often asked to take in hand this or that public work having a relation to horticulture. Its proper work is to educate the people, and let them do the practical work. It has, and is doing good service in this line by its exhibitions, and we think such hints as the above may serve it and other horticultural societies already working so well in this way.

Floral Decoration.—At a recent banquet in London, upwards of two tons of Ivy were used in draping the pictures, mirrors and walls, and that amongst the cut flowers were upwards of 2,000 blooms of Marechal Niel rose, and large

quantities of Stephanotis, Gardenias, and other sweet-scented flowers, while among the plants employed were Palms, Pandananus, Marantas, Aralias and Orchids. In the Royal banquets Italian Myrtles grown in the open air at the Queen's residence in the Isle of Wight, is one of her favorite ingredients.

Peristera elata.—The "Dove," or Holy Ghost plant, has flowered finally this year in the collection of Mr. Geo. Such, at South Amboy. The plant has no less than five flower stems, and these have reached six feet high.

English Bouquet Making.—English correspondents complain, that to avoid over crowding, the florists are going to the other extreme, and make bouquets and baskets of flowers so thin that they soon wilt and look shabby, not lasting the single evening in good condition.

Libocedrus decurrens.—This plant, which for so many years under the lead of Carriere, Europeans insisted in calling *Thuja gigantea*—calling the real Thuja gigantea, *Thuja Lobbii*, has been again turned over by Professor Koch. He insists that it is not a Libocedrus, and has made a new genus for it. He calls it *Heyderia decurrens.*

Dreadful Names.—Our English friends have as much trouble with their awful and local names as we have, as the following from the *Journal of Horticulture* shows :

"My friend asks, 'What is this pretty flower?' 'Gelasine azurea.' 'What a long name!' 'I cannot shorten it.' 'But why have a Latin name?' 'Better call it *Blue Smiler* in plain English.' 'Then you like such names as Shamrock, Blue Bells, Eglantine, and Culverkeys?' 'Certainly, every one can understand them,' 'You can recognize the plants?' 'Easily.' 'Well, I can show you in print endless discussions as to what they are. On the other hand, I defy you to produce two persons who disagree as to what plant is meant by Eucharis Amazonica. Now, look at page 32 of 'our Journal.' Would you like some of the plants described in the American *Christian Weekly*? The Night-blooming Jasmine must be very desirable, but what European nurseryman could understand the name? Looking down Don's long list, he would at last hit upon Jasminum noctiflorum; but as this is a native of Sierre Leone, it is not likely to be the right plant. Paradoxical as it may seem, Latin is in such matters more intelligible even to an Englishman than English."

And yet our friends have themselves often to blame. Our nurserymen have taken to raising garden varieties of Arborvitæ, and have adopted the sensible plan of calling them Tom Thumb, George Peabody, just as in varieties of blooming plants. But they have gone and christened them all over again, and we must say *Thuja occidentalis Aurea elegantissima*, and *Biota orientalis purpurea Nobilis nana*, and so on, or they will not countenance our new improvements. We do not know but we would rather be puzzled to find out what the "Blue Smiler" might be than have to examine a whole Latin dictionary to get at one name.

It may help our friend to say that the Night-blooming Jasmine, is so named from its Jasmine odor—it is Cestrum Parqui, but singularly enough, its common name was imported from England.

White Springs Farm, Geneva, N. Y. Nurseries of Nicholas & Newson. The *Geneva Gazette* has an article descriptive of this establishment. It comprises 300 acres. Pears, Apples, Peaches, Cherries and Plums, seem the leading items grown.

EDITORIAL.

THE GRAPE VINE INSECT.

The labors of scientific men are beyond that of all others, the most useful to mankind. And yet how little does the world at large know of its indebtedness to them! Indeed it is more than likely that they are rather the subject of sport than an object of respect. The botanist, with his portfolio; the geologist, with his hammers and chisel; the entomologist, with his net and bottles—what trifles do all these represent for sane men to follow! Even those who take a more earnest view of things, ask what good is all this minute knowledge? Suppose you find a new fly, or a new plant; or what if you find a new spot on a wing, or a new nerve to a leaf, what influence is it to have on the progress of the world at large? It is no more to be expected that one can answer these questions, than to be able to tell what use to the world will be the new born child. When it becomes a man or woman it may make its mark; or it may die out, leaving the world no better than it found it. A new born fact is like the new born babe. It is only after it grows that we know what will come of it. Thousands of facts come into the world, as thousands of men have, and have gone out without being missed; but every now and again one will distinguish itself, and leave its mark forever.

We cannot help but think that one of these striking facts will prove to be the discovery of manner in which the Phylloxera works to the injury of the grape vine. The little insect in myriads feeds on the young and growing fibres of the grape, and otherwise seriously injures them in the deposition of its eggs. Here is the new born fact. Science has done its work. It is now for the practical man to take the little organism in hand, and see what can be made of it. Its education depends on ourselves. Whether it can be made of use to us or not is our business, and and not the business of science. What can we make out of this new insect fact, in our grape culture experience?

Messrs. Planchon and Riley have well worked up the history of the grape Phylloxera. In France, Professor Balbiana has contributed some valuable facts in regard to an allied species which feeds on oak roots—Phylloxera quercina—operating much as the P. vastatrix does on the vine. In his paper he observes, he says, that *it is most destructive where the nature of the soil permits of easy access to the roots.* It is probable that this casual remark will not excite much the attention of the general reader, but we think here is a line of usefulness to which we may train this new born thought. There can be some mechanical structure of the soil, which, while permitting the roots to enter, the little insect cannot follow. Now we know this is true, that no *soil* is too hard for a root to penetrate. Nothing short of a solid rock prevents its advance. We have seen roots penetrate potatoes, going clear through on the other side; and in some instances have seen them penetrate other potatoes, hanging them together like a string of beads. Moreover we have seen roots press forward so tremendously against heavy stone walls, as in time to throw them completely over. The direct growth force is indeed one of enormous power. Even a Mushroom has been known to lift a stone of fifty pounds.—There is no fear but a root—a grape vine root, to keep in view our present topic—will penetrate the most solid soils. But only the roots can go through. Insects, or any other extraneous subjects or substances, are left behind.

That this is really the case, and that the insect does not follow roots through solid earth, is not only proved by the observation quoted from M. Balbiani, but accords with our own practical experience It chanced that the writer of this happened to be with M. M. Planchon and Riley during one morning of their investigations. There were some remarkably healthy Concords and Clintons growing in the tremendously hard and solid soil round an old barn, the vines being trained on the walls. No healthier vines can possibly exist in this world. No trace of Phylloxera could be found on these roots; but in the vineyard, where the soil is kept loose by the cultivator, they where found in immense quantities; the roots, when dug up, appearing as if covered by grains of wheat or rye. Surely some use can be made of these facts. No one need fear that a grape vine will not grow in hard, solid soil. With an abundance of manure Jonah's gourd would hardly compete with them.

In regard to the Phylloxera, people must guard against the impression that it explains all the phenomena of grape disease. This would be an absurdity. There would be an abundance of trouble left, though this were conquered; but this is a great one, and requires all the skill we can bring to conquer it. The selection of rapid rooting fibrous kinds is a great aid in fighting the insect. The Clinton, for instance, is a great favorite with the Phylloxera; but on account of its rapid branching of fibrous roots, suffers less than all others. The Concord also has free branching rootlets, and suffers less than others; while the Catawba among the natives, and the whole list of European grapes which have a tendency to long thread-like roots and fewer branching fibres, suffer from the insect more than all others.

With more knowledge of the habits of vines, and of the Phylloxera, we are not without strong hope that our cultivators will be able to master the insect.

TRAVELING RECOLLECTIONS.

With an invitation in his pocket, to "join with and say a few words to the Maryland Horticultural Society," the editor found himself one day, in the middle of July, on the cars for Baltimore. In the olden time, when railroads sought

the cheapest routes between two great points, this road led through a series of frog ponds and mud banks, in which snappers and musk rat holes, with reeds and splatterdocks, made up much of the "scenes" to see. We caught a glance of Bartram's old garden, and trod on the tail end of Buist's mammoth seed farm, but beyond this there was little to excite the interest of a horticultural traveler. New ideas in railroading prevail now. Populous way travel is an object; and people want to live where there is health and beauty. During the past year or so the railroad has been moved back to the high land; and the result is that already new towns like Sharon, Ridley Park and others, have started along the line, making more travel over it, besides giving the traveler so many pleasant things to see. We now pass through the heart of Buist's celebrated nursery—through a deep cut to be sure, so that we cannot see the ground; but the pretty trees and flowers around the railroad station—reminding the traveler of the beautiful railroad stations of Europe—tell the observer truly enough where he is.

Baltimore itself we had not visited for some time, and were glad of the chance to meet with so many old friends. It was only a flying trip to be sure, and too hot and dry to expect much; but when horticulturists are to gather together, there is always pleasure in the air, and something or another to be seen worth remembering. The present object was simply to learn what the new Horticultural Society was doing. Philadelphia and Boston both have good societies,—why should not Baltimore, with quite as much pretension to culture and taste? There had, it is true, been two attempts before to establish a good horticultural society in that city, but they always failed through personal differences as to how the thing should be carried on. The Baltimore horticulturists have probably learned wisdom from these failures, and it was part of our business to see how these things were. The President is Ezra Whitman, Esq.; and this—a summer social meeting to talk over ways and means, and prospects,—was held at his residence, just over the city line, near Druid Hill Park. Here gathered together a large number of leading horticulturists and distinguished citizens, and many letters were read from others, showing that their hearts were in the cause. We missed some old familiar faces, whom we know to take as much interest in the progress of horticulture as any who were there, but they will, no doubt, gather round the family hearth stone as future occasions may arise. Some excellent remarks were made by several gentlemen, all showing that they had the success of the Maryland Horticultural Society at heart, and that they meant to secure it. Mr. John Feast especially, gave a succinct account of the history of floriculture in Baltimore since his time. An excellent collation was provided for the guests by the generous host, and the pleasures of social intercourse in the house and about the beautiful grounds were maintained till nine or ten o'clock. There was no attempt to invite articles for competition or exhibition; but Mr. Black had some very tastefully arranged baskets of cut flowers on the supper tables. The grounds of Mr. Whitman are about five acres in extent—rather considerable for a city garden. They are very well arranged, and the numerous paths, most of them broken by plantings, will give the idea of a much greater extent when the shrubbery grows. This is the secret of laying out places like these, and the idea has been pretty well caught by the original designer. Much use is made of vases, and matters of an architectural character, which can always be employed to advantage in places of this kind. A very good idea was the employment of vases alternating with maple trees on one side of the carriage road, giving the shade so desirable to a drive, and yet taking off by the flowers the artificial character of the whole. The opposite side of the road was of evergreens—Norway Spruce and Arborvitæ alternately. This use of evergreens on the north and cold side of a drive, with deciduous trees on the sunny side, did not appear to be the result of any special design on this occasion; but struck us as an original idea, which might often be taken advantage of in landscape gardening. Another novelty here worth recording was a picket fence with iron posts. These are simply rods of about inch iron, set by sulphur into flat stone slabs. The lower rail of the fence is let through this by an auger-hole, and the upper one sits on the top of the rod—an auger-hole letting the rod a little way in. These posts never rot away, and enable the fence to be moved about anywhere. The same arrangement can be used to make vine trellises, or supports for Raspberries or Blackberries. It is one of the best things of its kind we have ever seen.

Here also we were particularly struck with the great merits of the English Cork or field Maple, Acer campestre, as an agent in successful landscape gardening. It keeps thick so easily, and bears pruning remarkably well, enabling one to make effects from it that few other plants will do.

The beautifully kept lawn, with its arbor seats seemed a favorite resort of the younger members of neighbors' families, large numbers of whom were enjoying croquet in the level portions of the grounds. This generous freedom of one's ground, and an unselfish disposition, is generally characteristic of the zealous horticulturist, and we refer to it here as nothing unusual, but rather as a thing of course.

Deciding to spend another day in visiting points of interest so far as the heat would let us, we accepted invitations from kind friends, with whom we enjoyed many horticultural treats, our recollections of which we must defer till another time; but we cannot close this chapter without tendering our best thanks to President Whitman, Col. Mills of the *Maryland Farmer*, and Mr. Sands of the *American Farmer*, two admirable agricultural monthlies, for kind attentions received from them.

SCRAPS AND QUERIES.

THE DROP OR BAG WORM.—*A Hammonton, N. J., correspondent* says: "I send you by this mail specimens of a worm which is making havoc with our apple trees and evergreens. I send old Cocoons of last season, and several sizes, as they are now at work. It is not very difficult to pick and burn them, when found on small trees; but when on the extremities of large trees, it is no small affair to destroy them. Perhaps you can give us some information in the columns of the *Monthly* that will aid us in destroying them. I have found an old Cocoon, in several instances, where the young worms were abundant, but knowing nothing of their winter quarters, or the manner of depositing their eggs, etc., I did not know whether the two had any direct connection."

[This is the common bag "worm," an inveterate foe to evergreens, but easily kept down by hand picking. Always pick them off at any season.]

ULMUS RACEMOSA.—*Prof. Beal, Mich. State Agricultural College, Lansing*, says: "We have some of these trees about the lawn. A few stand where they grew before the land was cleared by the brook side: others have been set in a variety of soils. They grow very slowly, every specimen, and are not favorites with any of us. The cork on the twigs adds a little to the variety. *Ulmus fulva* does better, but neither comes any where near to *Ulmus Americana*, which stands without a rival as queen of the forest."

W. A. N., Moline, Ills, says: "My Early Richmond, Late Kent and English Morello cherries, have borne abundantly, while the common Black Morello is almost an entire failure. Other fruits promise well."

"*Amateur*," *Bedford, Mass.*—J. Warren Merrill, of Cambridgeport, Mass., is desirous of corresponding with you about your climbing Californian Fern, if entirely agreeable to you.

HARDINESS OF THE CAPE JASMINE.—*D. M., Macon, Georgia*, obliges us by the following note: "In your reply to your California correspondent, in regard to the hardiness of the Cape Jasmine, you ask to be informed positively if it will stand a temperature of 6° below the freezing point. Here, where the thermometer often falls to 16° above zero, it is perfectly hardy. Once in the winter of 1872 it fell to 10° above zero, and they were uninjured."

RED SPIDER IN GRAPERIES.—*Geo. H., Ipswich, Mass.*, says: "I address the following inquiries to you, because an editor is, now-a-days, supposed to know all things, or to be in a position to draw out the desired knowledge of others for the public advantage. I am much troubled in my grape house with Red Spider. I am afraid to use kerosene as has been recommended, for I suppose it must hit them to kill them, and to use enough to hit them all, or most of them, would require more than would be safe for the foliage of the vines. Tobacco smoke will not

have much effect on them, though it will keep the Thrip in subjection. Will not carbonic acid gas kill all these breathing enemies? Will plants live over night in it, or will it kill the foliage? My grape house contains something more than 3000 cubic feet. How much charcoal would yield gas enough to fill it? or how much would it be safe to use in the experiment."

[The use of carbonic acid gas is a new idea to us, and might probably be successful. Being new we can give no advice. Try a little at a time, increasing if not effective, and no injury results to the vines.

In ordinary culture the best plan is to keep the vinery clean from falling leaves, and when the vines are trimmed take off the loose bark, and give the stems a painting of sulphur, lime, and soot mixed with water. As the vines come into leaf, keep sulphur strewed about in the hottest part of the house, and use the syringe freely. A good hand force pump is a capital thing to have in a grapery. Red Spider is seldom very troublesome under this treatment. Some burn small lots of sulphur once in a while, but this is very dangerous. Only experienced hands should do it.]

PÆONIES.—A subscriber has trouble with some of the varieties of this plant—*Humei* and *Fragrans* (the names under which they were received)—never giving any flowers, though they form flower buds, the former very plentifully, the latter sparingly. One stands west of a Salem grape vine; the other north of a rose bush, and two feet distant.

[It is very difficult to tell what can be the matter without seeing them. Is the soil too poor? or is it too shady?]

GLADIOLUSES.—*John* says: "The statement has been made in print several times, that American seedlings are equal, if not superior, to the fine imported varieties. Now if the editor of the *Monthly* indorses this, we are bound to believe it; but at present we must beg to be excused. For we have never yet seen an American seedling which could at all compare with Shakspeare, and Meyerbeer, and Mary Stuart, and M. Le Gouve, besides other varieties which could be named. And as for the *plural*. What if Gladiolus is a Latin noun of the masculine gender. In bringing it into our language it loses its gender at once; and is there any reason why we should bring with it any other peculiarities of Latin declension? Why, for instance, we should change the singular termination *us* into *i* in the plural, instead of making it conform to the English rule since we have made an English word of it? [Quite right.—ED.]

Mr. F. R. Elliott says: "Having removed my place of residence from Cleveland, Ohio, where I have passed the last quarter of a century, to the city of New York, I am ready to serve in my line, such wants as may be desired. As a landscapist, or designer of home grounds, I have had long experience and success. I make my plans, give reasons for my work, and if not satisfactory stand ready to improve, or change them if they are incorrect. As a consulting horticulturist, and writer for the public press, I have only to refer to my past record. I think that without egotism, I may say I am well acquainted with nearly every variety of fruit, tree, or hardy plant and shrub, and the soils, culture, etc., suited to their successful growths. I shall be pleased to answer any communications, and agricultural and horticultural journals, etc., who may desire from me now and then a short article of practical import, will be served upon demand at reasonable prices. Drawings illustrative of fruits, etc., with descriptions, also for plans, general arrangement of grounds, for small or extended places, parks, cemeteries, ect., will be promptly furnished to order at reasonable prices.

CIRSIUM PITCHERI.—With the following note, a correspondent from the western shores of Lake Michigan sends us a specimen which proves to be the above. We refer to it here in order to attract attention to a pretty thing well worthy of cultivation in these days of popular silvery-leaved plants: "I send you by mail a sample of a thistle that grows in the sand-hills along the Lake shore here. It is almost white in foliage and flower, but probably you have seen it often in your travels. I seldom ride along the beach but I find something that we saw growing in the Rocky Mountains."

STAPELIA VARIEGATA is probably the plant referred to in the following from a correspondent at Mount Carmel, Illinois: "There is a plant in bloom just now at this place which creates considerable curiosity among all who see it. The plant resembles a cactus in every respect but the flower, which is star-shaped, of a leathery texture, wrinkled and wax-like; corolla, five leaved; color, dirty-yellowish, with purplish brown dots all over the flower, and according to Linnæus, belongs to fifth order, first class. Two students of botany in this place insist on it being a Cactus. I allow myself to differ from this opinion. Will you be so friendly as to inform me of the name, etc., of this plant, provided you can recognize it by my rather incomplete description?"

FERNS FROM AUSTRALIA.—An Australian correspondent tells us that it is quite probable some of the gigantic tree ferns of that country will be on exhibition at the Centennial Exposition in Philadelphia.

DROUTH IN KANSAS.—*W. H. J., Topeka, Kansas, July 23d*, 1874, says: "We are having a fearful drought; there will be no late potatoes raised in this part of Kansas; and if we get one-half a crop of corn on the bottom lands we will do well. Chinch bugs destroyed all the spring wheat, damaged oats and millet, and have destroyed several corn crops. Peaches will be about one-half a crop, and very small at that. Apples dropped very badly, pears also. Raspberries and blackberries did very well for one or two pickings, but balance dried up so as to be almost tasteless."

[We have the same reports everywhere this year, and Kansas must not expect to enjoy all the glory of the great drouth this time.]

SUCCULENTS.—A friend and correspondent writes us that he thinks Mr. Rathbun, in his article on these plants at page 200, does not seem to be aware of the extent to which the culture of succulents is going on in this country. "So far as I know," our correspondent quotes he says, "comparatively few succulents are as yet to be found in collections in this country." Our correspondent thinks he would find some good ones near Boston. Messrs. Hovey & Co. had forty species of Agave, including such rare sorts as Vandendonkti Nissoni, Filifera, Verschaffelti, Amœna, Dealbata, etc., and including two of the largest and finest of all Media picta, four feet high. They have also 400 species of Aloe, Echeveria, Sedum, Sempervivum, Kleinia, Mesembryanthemum, Haworthia, Opuntia, Echinocactus, Dyckia, Hetchtia, Mammillaria, etc. They had also more than a dozen seedling Cereus of the most remarkable character, with flowers of all colors, from which to select, some of them measuring 10 inches in diameter. Mr Sargent of Brookline has some thirty or forty species of Agave, and Wm. Gray, Jr., of Dorchester about the same number. The Botanic Garden at Cambridge has 300 varieties or more of succulents, and Mr. Ross, of Boston, some 300 sorts.

"Mr. Rathbun's article is timely and well, but it seemed to do injustice, unintentionally, no doubt, to other cultivators."

PACKING CHARGES BY NURSERYMEN.—"*Justice*," *Westminster, Md.* "Wanting two Silver Poplar trees to set on the street in front of a small house I own in a town in our State, I wrote to a nurseryman for his prices, and in reply had the offer of two at 50 cents each. I ordered them, and requested that they be packed so that there should be no danger of having the stems barked by the railroad traveling. In due time they came, and a bill of $1.50 charged for a box to pack in. I paid $2.00 freight on the trees, which, with the charge for the box, makes the two trees cost $4.50. I think the charge of $1.50 enormous when the trees cost only $1.00, and refuse to pay the extortion. The nurseryman insists that it is the custom of the trade, and suggests that I have that point settled through the *Gardener's Monthly*. Now, sir, I would be glad to know whether it is the custom of the nursery trade to charge more than double the original value of trees, for a box to pack them in."

[The question is too deep a one for us, and we give up trying to answer it. It is just possible that the nurseryman made several dollars of profit by the transaction, and could well afford to throw in a ten foot packing case for next to nothing; but unless we know how much he did make we cannot of course tell. As for the nursery *rule*, there is none that we know of. It is a matter of bargain between buyer and seller. When no special directions are given about this, it is supposed the matter is left to the best judgment of the nurseryman, who charges accordingly.]

NAMES OF PLANTS.—*S. S. W., Baltimore*, sends us pieces of leaves for name. It is not easy to name without flowers; but these appear to be, 1, Impatiens fulva, 2, Solidago, 3, Eupatorium perfoliatum, 4, Vernonia novaboracense, 5, Euphorbia colorata, 6, Lobelia inflata, 7, perhaps Zizia integerrima, 8, Asclepias purpura-

scens, 9, Chimaphila maculata, 10, male frond of some Fern, 11, Asclepias tuberosa, 12, Pycnanthemum hysopifolium, 13, Echium vulgare, 14, Acerates viridiflora, 15, Smilax rotundifolia, 16, Trifolium arvense, 17, Goodyera pubescens, 18, Vitis variegata.

HOT WATER BOILERS.—A correspondent says: "I doubt about heating better with two pipes than four. The boiler must be a very poor one; and besides no one wants the water boiling in the pipes, the air is usually dry enough in this country without that; but I have no doubt there will be replies to Mr. Jordan by others more competent than I."

[We are quite sure no one would be more glad to have objections made to his plan than Mr. Jordan himself. It is his interest to find out the cheapest and best way, if he has not found it already.]

NEW AND RARE FRUITS.

AMSDEN'S JUNE PEACH.—"*Carthage, Mo., July 8th*, 1874: I sent you by yesterday's mail a sample of 'Amsden's June Peach.' It is from two to three weeks earlier than Hale's Early here. Certainly two weeks earlier. The tree resembles Hale's and like that sort is very hardy and productive.

"It is a chance seedling. The seed was gatherd from various sources, and planted by myself in the year 1868. It fruited for the first time in 1872, bearing nine peaches, which began to ripen the last of June. One specimen was exhibited at the Fourth of July celebration in Carthage, by Dr. Cunningham. The last specimen was left on the tree till the 7th of July, when it was the perfection of ripeness.

"It fruited again this year—1874—also, upon thirty or forty trees, which were budded from it in 1872, fully sustaining its reputation for earliness, also proving very hardy and productive, being entirely free from the 'curl,' which was so destructive to the peach crop in this locality.

"Leaves with globose glands, flowers large, fruit of medium size, round, with suture on one side. Color deep red in the sun, nearly covered with red. Flesh greenish white, very juicy, melting, sweet and well favored. Stone small and fine grained. It is a free-stone, adhering a little to the stone. Proves to be a good keeper.

"L. C. AMSDEN."

[This came to hand on the 14th of July. It is a good peach, equal to Hale's Early; but with the experience we have had in the Plowden and some others, we should like to feel sure that this will continue "two to three weeks earlier than Hale's Early." If it does so continue, it will be of course a good thing.—ED. G. M.]

EARLY SEEDLING PEAR.—A correspondent from Mount Airey, near Philadelphia, under date of July 17th, sends us the following: "I send you herewith a branch of a pear tree with ripe fruit, a seedling from the Seckel, the seed having been planted, and the tree grown on my place. The quality of the fruit is only fair, but coming in a few days earlier than any other variety, I think it has some value. You will notice that the foliage, and the growth of the fruit in clusters, resemble somewhat the Seckel."

[This is before the Doyenne d'Ete, Dearborn's Seedling, or *any* early pear we know. The flavor is but second-class, but on account of its early ripening it would be valuable as a market fruit, where early pears for stewing are always in demand.—ED. G. M.]

NEW STRAWBERRIES.—The following are Pennsylvania seedlings, which have good reputations. The account is by Mr. Amos Miller:

Cumberland Triumph.—In this berry there is a most beautiful blending of the fine form, high flavor, and large size of Jucunda, with the vigorous growth, hardihood, and productiveness of Green Prolific.

The past season it has been fairly tested along side of a number of popular varieties, new and old, and combining very large size, perfect form, exceedingly fine flavor, vigor of growth, and productiveness, it stands unrivalled. Berries under ordinary field culture, without stimulating manures, or pruning, or thinning out, measuring five inches in circumference, and maintaining a more uniformly large size throughout the season than any berry I have ever grown. Plant very vigorous and productive; fruit of the finest flavor; color light; perfect form; a few days earlier than Green Prolific, and continues bearing longer, thus prolonging the season.

Springdale.—Plant low set, fruit stem heavy, berries very large and perfect, thirteen berries filling a pint measure, remarkably firm, will stand distant shipping and rough handling, equal to Black Defiance or Triumph de Gand, dark colored, and in flavor one of the best for so large a berry under cultivation. Not as a strong and vigorous a grower nor as productive as the Cumberland, but its fine form, rich color, large size, firmness and exceedingly fine flavor gives it the highest rank in market; does very well by promiscuous culture.

Golden Defiance.—Plant vigorous, fruit large, of the most brilliant golden hue, fine flavor and firm, moderately productive, very late. Last season we gathered some of the finest fruit, when other varieties were over, and this season shows the same lateness.

Kohocken.—Plant very vigorous, in point of size, productiveness, flavor, and firmness, equal to Green Prolific. A few days later.

Early Queen.—A seedling grown from Metcalf's Early. Moderately vigorous and productive, as large as Wilson, second rate in flavor, but for the past two years has been four days earlier than Wilson. Its earliness and fine appearance makes it a marketable variety.

RIPENING BEFORE HALE'S EARLY.—The peach referred to in the following reached us on the first of August. It was of very superior quality for an early peach, and larger than some we have seen: "*Mt. Pulaski, Illinois, July 30th*, 1874.—I regretted to hear that the specimen of the Alexander Early Peach sent you by Mr. Capps in 1872 was not received, and the original tree having been bored to death, it still remains to be regretted that you will probably be unable to see a specimen before next year. However, fortune, or something else, has sent me another seedling, (a specimen of which I send you) that will give a very good concep tion of that variety. It has not reached the size that that one did, but its quality is, I think, better. I cannot give you its date of ripening, for the simple reason that its fruiting performance remained undiscovered until yesterday. At that time much of the fruit had fallen, and some of it entirely decayed. Only four or five specimens remained that could give any hopes of good carriage so far as Philadelphia. The Hale here is coloring somewhat, but is still quite hard."

EARLY BEATRICE PEACH.—This has fruited in various parts of the Union, as we learn from several correspondents, all of whom agree that it is earlier than Hale's Early, which has so far proved our best early peach.

BEFORE HALE'S EARLY.—"*Marietta, Penna., July 26th*, 1874: I send you by to-day's express a few seedling peaches, of which I would like to have your opinion if they possess merit. Several years ago I grew some Hale's Early Peaches in pots in the greenhouse, also a few Apricots, which I cross fertilized with each other, (or at least thought I did). The Apricots so treated dropped off, but half dozen Peaches grew perfect, and were very fine, and of good quality. I planted the seed, four of which grew, but no sign of Apricot about either of them. One of them (No. 1) grew especially strong and healthy, and bore a few peaches two years ago, which were ripe 20th July. They might all have had a crop last season, but the cold winter previous prevented it. The tree which grew so vigorous and bore a few specimens, was much injured by the cold. The four trees now look quite healthy. I might have sent you specimens from each of them but the severe hail storm an 2d inst. left very few on the trees, and of these scarcely a perfect specimen. On one tree none were left. From No. 1 the best specimen was stolen, so I put in the best that is left. Two years ago it bore larger fruit than any I send to-day, and about six days earlier. That the fruits sent are earlier than Hale's, I have only to say that we expect none ready for shipping short of ten days or two weeks. So I am safe to say the seedlings are at least a week earlier than Hale's."

[We will only say of these that they are the largest and best of any new seedling peaches we have received this year "ripening before Hale's Early." These *early* peaches do not always *continue* early—if these do, Mr. Engle's peaches, especially No. 2, will be hard to beat.—ED. G. M.]

A NEW RASPBERRY.—A West Chester, N. Y., correspondent says: "Knowing your interest in any thing that looks like progress in horticulture, I am induced to describe a new Raspberry which it was my privilege to see yesterday for the first time. I received a note, the evening

before, from a horticultural friend living some eight miles distant, requesting me to come without delay to see a new Raspberry. As my friend is known to be a very modest man, and has spent a long life in promoting horticulture, I thought best to attend to the summons, and at 6 A. M. I was at his place. I found him out among his fruit and plants. He exclaimed, too late, "you should have come yesterday; I have picked the fruit off my seedling Raspberry, thinking you would not come" (he had written the note two days before, but was delayed on the way). But, said he, I have a Raspberry as large as the Lawton Blackberry, and more productive. We were soon introduced to the new candidate, which is to be the Raspberry. The plant consisted of about seventy-five stools, the young canes looking very stout, about five feet high, well branched, looking as though they had been pinched in, and very neatly trained. I was informed that nothing had been done to them,--it was their natural growth. The canes are very strong, nearly an inch in diameter near the ground; the laterals are short and strong. I should judge that pruning could not improve the shape of the cane. In regard to the fruit as I saw it, notwithstanding it had been picked daily since the 5th of July, it is hard to describe the stout canes of last year's growth, which were bent nearly to the ground with the weight of the fruit. My friend informed me that they had already picked from one to two quarts from each stool, and one stool of four bearing canes, he had noted, and had picked from it two quarts. I judged that there was still on the cane four to five quarts, which will make six to seven quarts from one stool of four canes.

This is a seedling of the Catawissa, and very much like it in color, or a little darker than the Philadelphia; very firm, juicy, sprightly, nearly of first quality, more than twice the size of the Philadelphia. I had a good opportunity to judge of size, quality and bearing, as alongside were growing Philadelphia, Clark, Brinkle's Orange, and many other kinds. And I do not hesitate to say that it appeared to have on twice as much fruit in quantity as the Philadelphia. I brought home with me a box of the fruit. Although the weather is very hot, but little change has taken place in thirty hours, which leads me to think that this berry can be shipped long distances. I see but one serious objection to this new berry, it is increased from the tips, and from the fact of its being a stiff, upright grower, it will have to be bent to the ground, to increase the plants, and it will be some time before much stock can be procured."

[A day or two after this came a box the size of an ordinary bed-room bureau, with a sample of this Raspberry. It was a little out of the ordinary size for "samples of Raspberries," but the inside of the "chest" warranted the size. It was *one cane* covered with fruit. It was certainly the most wonderful sight in the Raspberry line we ever saw. Most of the fruit had fallen, and were mashed of course, but we should think this one cane had borne *nearly a peck*.—ED. G. M.]

CORNELL'S FANCY APPLE.—*J. F. B., Titusville, N. J.*, says: "There was an article in the *Gardener's Monthly* of August, taken from the *Bucks County Intelligencer*, that I will endeavor to explain. I have bearing trees of the above obtained from a reliable source near Newtown, Bucks County, Penna. The description is correct. I also have the Williams Favorite, original grafts from A. J. Downing. The above Apples are identical. In revised edition of Fruit and Fruit Trees of America they are described under each name, and the descriptions are very much alike. We find it a very good Apple, bearing young and prolifically."

Communicating the substance of the above to Mr. Downing, we have the following from him:

Your correspondent is mistaken in saying that Cornell's Fancy and William's Favorite are identical. They are quite distinct. The fruit of Cornell's Fancy is not quite as large—more oblong, and more conic, and the color not near as dark as the William's Favorite. The tree of Cornell's Fancy is much more upright, and the young shoots of a lighter color. Cornell's Fancy ripens two or three weeks later. Both are good apples of their season.

THE THREE EARLIEST PEACHES.—Your correspondent, Thomas Brehaut, Guernsey (p. 48), places the Early Rivers Peach before the Early Beatrice in ripening. This is different from my experience with these varieties, for I have generally found the Early Beatrice color and ripen the earliest, whether grown in pots, Peach-houses, or in the open air—that is, when they were grown under the same circumstances. The Early Beatrice is not so large nor so good flavored as the Early Rivers, but it always colors well and grows with me best in pots, often reaching there to a middle-sized fruit; it is hence invaluable for a dish or two early in April for the dessert. The Early Louise I have found, like Mr. Brehaut, to ripen about a week or eight days later than the Early Rivers, and I agree with him that it is the best of the three varieties for size and flavor. Since the above three varieties of early Peaches were left out by Mr. Rivers, I have grown them extensively in pots, in the houses, permanently potted out, and on the walls in the open air, and have therefore had some experience in their culture. As to early ripening Nectarines we still want a better variety than Hunt's Tawny, for it is, as Mr. Brehaut describes, too small unless well grown, and it is very subject to mildew. Rivers' Lord Napier ripens a week or two later than Hunt's Tawny, and is the best Early Nectarine yet let out.—WILLIAM TILLERY, in *Gardener's Chronicle*.

NEW AND RARE PLANTS.

VARIETIES OF VIOLA CORNUTA.—This Violet, which has more the habit of a Pansy—Viola tricolor—than any other in cultivation, has been much improved by English florists, and is very popular. Mr. B. S. Williams of Upper Holloway, London, has a figure of one of these in his pretty catalogue, now before us, of which he says "Viola cornuta 'Sensation:'"

Although we have been successful in distributing several fine forms of this beautiful plant, all have been distinct and capable of being used in conjunction with each other, and the present one is not an exception. It is quite distinct from any other variety yet sent out, robust in habit, and a most profuse bloomer; flowers large and of great substance, standing well up above the foliage; upper petals intense deep violet purple, lower ones clear violet; eye small, yellow, and rayed with purplish violet, and flowers a month earlier than any other Violet.

BRODIÆA COCCINEA.—We notice that this beautiful California bulb is now being advertised for sale in various quarters. It is a narrow leaved plant, throwing up a stem about eighteen inches high, on the top of which are several pendulous somewhat bell-shaped crimson flowers. It is worth noting in order to prevent persons from buying the same thing twice, that Professor Alphonse Wood has named it *Brevoortia Ida-mai*, considering it distinct from Brodiæa, a view we believe Dr. Hooker agrees with, so that it is not unlikely the two names will get into use.

BLOOMERIA AUREA.—This is a rather new California genus of bulbs, which has been named for a well-known California botanist, Dr. Bloomer, by Dr. Kellogg of San Francisco, and which is already advertised for sale. It has flower stems a foot and a half high, and has an umbell of yellow flowers, with brown lines running through the petals.

DIPLOPAPPUS CHRYSOPHYLLUS.—*X.* says: "The new evergreen shrub, *Diplopappus chrysophyllus*, described by L. Van Houtte as being entirely hardy in Belgium, has proved to be the same in New Jersey. Plants—even those that were severely cut back for cuttings—withstood the cold of last winter unprotected, without injury, and made a strong growth during the spring and summer. The flowers are white and inconspicuous, resembling Sweet Alyssum in appearance, but smaller. The plant, although having 'a heath-like appearance' as described, does not possess the delicate and graceful beauty of the Ericas, and is not, in our estimation, a *handsome* shrub. However, its marked oddity, hardiness and strong growth, make it desirable as an evergreen shrub, and entitles it to a place in all extensive collections."

CHRYSANTHEMUM CATANANCHE. *Nat. ord.*, Compositæ. *Linn.*, Syngenesia Superflua.—Dr. Hooker says: "This, which is one of the most beautiful plants of the Greater Atlas, was discovered in 1871 by Messrs. Ball, Maw, and myself, in valleys of that range at elevations of 7000 to 9000 feet, flowering in May, and has since been cultivated both in Mr. Maw's garden and at Kew, where it flowered for the first time in April of the present year. In its native country it forms patches of a silvery green hue, and of considerable size, in rocky valleys, and on mountain slopes exposed to the sun. The [flowers

are yellow and] broad white involucral bracts are conspicuous for their silvery whiteness, hyaline texture, and transparency, relieved by a narrow purplish herbaceous central band; their resemblance to the bracts of Catananche has suggested the specific name."—*Botanical Magazine.*

ROMANZOFFIA SITCHENSIS. *Nat. ord.*, Hydroleaceæ. *Linn.*, Pentandria Monongynia.—Flowers white. "This very rare and interesting little plant, with the habit of the Saxifrage of the granulata group, is closely allied to the majestic Wigandia of our subtropical gardens, though so dissimilar in stature, habit, and general character, and in coming from so different a climate and country. It is a native of a few distant spots over a very wide range of country in North-western America, and has been gathered by very few collectors. First, by the late venerable Menzies, the naturalist to Vancouver's voyage (and introducer of Araucaria imbricata) in May, 1793 who discovered a small slender variety of it on hanging rocks at Trinidad, in California, lat. 41° 10′ N; next by Chamisso at Sitka in the then Russian, but now American territory of Alaska, fully a thousand miles north of Trinidad, and by whom it was first described; more lately it was gathered abundantly by Dr. Lyall, on the Cascade Mountains, in lat. 69° N., in the bed of the Sallse River, and a large flowered variety (Regel's R. grandiflora) on the same mountains, at an elevation of 7000 feet. Lastly, we have specimens collected in South California (probably in the mountains) in lat. 35°, by Dr. Bigelow, surgeon to Lieutenant Whipple's exploration for a railway route across America in 1853-4; this is fully 1400 miles south of Sitka."—*Botanical Magazine.*

IRIS OLBIENSIS. *Nat. ord.*, Iridaceæ. *Linn.*, Triandria Monogynia.—"This belongs to a small group of dwarf Iris, which inhabit for the most part southern Europe, and of which the I. pumila, *L.* (tab. nost. 9, 1209 and 1261) may be taken as the type. It is a native of the south of France and North Italy, from Nismes eastwards, but apparently not advancing beyond Tuscany. It varies much in the color of the flowers which (usually purple) are sometimes white. It is distinguished from I. pumila by the much larger flowers, which are pedicelled and less fugacious, as also by the shorter perianth-tube. The I. Italica of Parlatore appears to be only a variety of it; and it is represented by I. pseudo-pumila in Sicily. It is very closely allied to, if not a mere variety of the I. Chamaciris, *Bertoloni*, which has a wider range in France and Italy. The specimen here figured flowered in the Royal Gardens in April of the present year.—*Botanical Magazine.*

CAMPSIDIUM CHILENSE *Nat. ord.*, Bignoniaceæ. *Linn.*, Tetrandria Monogynia.—Flowers crimson. "This very beautiful climber is a native of Chili and the Archipelago of Chiloe, and was discovered on the Island of Huaffo by Dr. Eights, an American voyager, who sent a small collection of Chilian and Fuegian plants to Sir William Hooker some fifty years ago, amongst which is this plant. It has subsequently been collected by many botanists, most recently by Dr. Cunningham, naturalist to the surveying expedition of H. M. S. *Nassau*, who gathered it as far south as Wellington Island, in lat. 40° S., where it would seem to be common. Its northern limit is probably Arique, near Valdivia, lat. 50° S., where it was found by Lechler. It is not a little remarkable that so beautiful a plant, and one found through so many degrees of latitude in Chili, should have escaped the observation of C. Gay, whose 'Flora Chilensis,' published in 1845, does not include it. The equally conspicuous Berberidopsis corallina (tab. nost. 5343) which, like Campsidium, is a native of the neighborhood of the maritime capital of Valdivia, was also unknown to that author, though he spent many years exploring that country for the Chilian Government. With Messrs. Veitch the plant flowered in April of the present year."—*Botanical Magazine.*

PYRUS BACCATA.—*Nat. ord.*, Rosaceæ. *Linn.*, Icosandria Dipentagynia.—Flowers white, fruit crimson and greenish yellow. "This charming tree, though so long known in cultivation, has never before been well figured in this country. It has a very wide distribution; in Siberia it occurs in the eastern districts of Lake Baikal and in Dahuria; thence it passes through the Amur River north of China into Japan, whence we have numerous specimens. In the Himalaya it extends from the Indus to the Kumaon, at elevations between 6000 and 11,000 feet, entering the Tibetan region of Piti; and it was gathered by Dr. Thomson and myself in the Moflong woods of the Khasia Mountains, at an elevation of 6000 feet. It varies very much as to the pubescence of its parts; the Siberian and Japanese specimens being almost wholly glabrous; the Western Hymalayan having more or less pubescent calyces, pedicels, and petioles, and sometimes young leaves beneath; whilst those from the dry region of Piti, on the border of the Tibet, are as glabrous as the Siberian; and those from the very wet region of the Khasia are the most pubescent of any. This correlation of humidity with pubescence is not unusual in the vegetable kingdom."—*Botanical Magazine.*

TOXICOPHLÆA SPECTABILE—This is one of the choicest introductions of modern times, useful alike for the decoration of the stove, the drawing room (when in bloom), and for exhibition purposes, and much superior to its near ally *T. Thunbergii*. It belongs to the order Apocynaceæ, and in habit and appearance very much resembles an Ixora; the leaves are opposite, elliptic, and dark green; flowers tubular, with a spreading five-lobed limb; pure white, deliciously fragrant, and produced in a large terminal corymb, and in smaller ones from the axis of the leaves, thus forming a dense raceme of bloom upwards of a foot in length. Native of South Africa.—B. S. WILLIAMS.

BEGONIA OCTOPETALA.—This is a fine bulbous species; belongs to the same section as *B. Boliviensis* and *B. Veitchii*, but is by far the grandest species ever sent out; the leaves are large, orbicular, deeply lobed, and dentate at the margin, bright shining velvety green in color. The plant grows from one to two feet high, flowers large, produced in dense corymbs, and composed of eight large waxy petals, which are pure white within; outside, however, they are bright rosy-carmine. As this species is found at considerable elevations on the mountains of Peru, it will thrive in a cool or intermediate house.—B. S. WILLIAMS.

HYDRANGEA JAPONICA SPECIOSA.—This is a beautiful sub-evergreen variety; the leaves are broad and dark green, beautifully striped along the centre with pure white. It forms a dwarf and compact plant, admirably adapted for conservatory decoration, or for use in the flower garden during the summer months.—B. S. WILLIAMS.

ALTERNANTHERA AMABILIS TRICOLOR.—This is a charming variety, remarkable for the brilliancy of its large leaves; it is of very free habit, and forms a very beautiful ornament to the flower garden during the summer months, either in small beds, or as a border plant.—B. S. WILLIAMS.

YUCCA FILAMENTOSA VARIEGATA.—Although this variety is nearly hardy in some parts of this country, it is always more handsome and effective when treated as a greenhouse plant. The leaves are from twelve to eighteen inches in length, and about two inches broad; the centre, dark green, broadly bordered with pure white, and, in addition, clothed at the edges with long white filaments.—B. S. WILLIAMS.

ERYTHRINA PARCELII.—This is a distinct and handsome species, which, in addition to its brilliant cinnamon red flowers, has the leaves beautifully veined and mottled with yellow. It is a very effective and ornamental plant. Native of the South Sea Islands.—B. S. WILLIAMS.

FOREIGN INTELLIGENCE.

TABLE DECORATIONS.—The selection of stands for the decoration of the dinner table must depend (as has been well shown by Mr. W. Thompson, in the *Garden*) on the manner in which the room is illuminated by means of artificial light. Generally speaking, there are but three ways of lighting rooms with gas or wax lights, viz., lights placed on the table, bracket or wall lights, and the chandelier or gasalier. The style of stand or stands selected for the table wholly depends upon which of these modes of lighting is adopted. For instance, if the room be lighted by two gas lights or chandeliers, one at each end of the table, a March stand should be chosen; but if illuminated by a gasalier placed over the centre of the table, the selection of such a stand would be a mistake, for, the light being above the stand, though the flowers arranged in

the top tazza would be well shown up, those in the lower one would be put into the shade; the top tazza would catch all the illuminating rays, and keep them off the lower one as effectively as if a screen had been placed over it. By such an arrangement as that shown in an excellent illustration, each tier has its proper share of light. Where the gasalier is placed over the table, the best form to use is a high single slender trumpet, or some such shape, so that when the light happens to fall on it, it will not throw any shadow on the arrangement which may be placed round the base of the vase. When the light is placed over the centre, flat arrangements can be used with advantage, though for my own part, where possible, I give preference to something high in the centre. Undoubtedly the best stand for a room thus lighted is the trumpet, or some modification of it.

When about to purchase new stands, these remarks should be borne in mind, and also when arranging pot plants on the dinner table; for the mode of lighting effects them quite as much as stands. If the lighting is not taken into consideration, large Fern fronds and similiar foliage would throw heavy shadows on the table-cloth, which would spoil the look of any arrangement in their vicinity.

Plants Placed Through Dinner-tables.—Many will doubtless be ready to exclaim, "Who would cut holes in one's dinner-table or table-cloth for such a purpose?" Well, allow me to explain how this can be effected without damaging either the table or cloth. With the exception of those who have seen suitable plants put through a table, no one can have an idea of the elegant effect which they produce when arranged in that way. Imagine the striking effect which young Tree Ferns or Palms have in such positions; their elevated fronds shading from the blaze and glare of light the smaller arrangements of flowers and fruits laid here and there on the snowy damask below them, a result which cannot be produced unless the plants are put through the table. This may be done in several ways. Dinner-tables are generally of two kinds—the one the telescope, into which may be put as many or as few spare leaves as may be desirable; the other that with a large centre and spare ends, which may be added at pleasure. There are two ways of putting the plants through these table. Now-a-days dinner-tables are never, I need hardly say, uncovered, therefore it is of no consequence of what material the top of the table is made, provided one leaf, reserved for a plant in the centre, or two if for a plant at either end, be made of common deal, either the same size as the mahogany one for which it is substituted, or only a foot or 18 inches wide, if the table is required to be made shorter. This spare leaf should be cut in two, and a half-circular piece cut out of each piece, which, when replaced in the table, will leave a circular hole in the centre. Before this deal leaf is lifted into the space from which the mahogany one has been removed, a wooden box, or anything which will form a stand for the plant, should be put into proper position; the plant should be then placed on it and carefully raised to a proper height, keeping always the surface of the pots just below the level of the table. Each half of the spare leaf may then be fitted into its place, when the stem of the plant will occupy the centre of the circular hole cut for it. If there is a plant to be placed at each end of the table, the best way of supporting them is to place a long plank underneath. Should Ferns be used, the holes cut out of the spare leaves must be of the same size as the top of the pots, as, in the case of such plants, the pots must be flush with the table.

The other plan of arranging plants in this way is to have a small piece of brass or iron that may be drawn across and fastened when the table is within an inch or an inch and a half of the closing, which will prevent its either closing or opening. This form is suitable only for Palms, and similar plants. It is in this way the tables with extra ends must be managed, and about which there is no difficulty; for I constantly practice it. Let us now turn to the covering of the table. The way the table-cloths (for it takes two to each table when so decorated) are arranged, is as follows: Each cloth is opened and spread along each side of the table, so as to meet in the centre or lap over each other about an inch. They should be kept as flat round the base of the plants as possible, and the cloths should be pinned together so as to prevent them from being open. A clean flat-iron should next be obtained with which the folds should be neatly pressed, so as to obliterate any appearance of a join. If half the width of the cloth is not found enough to allow it to droop gracefully at each side allow more; but always keep the middle fold flatly pressed a trouble which will be well repaid by the effect produced. My tables both at South Kensington and Birmingham had

plants put through them. At the former I had a graceful pair of Pteris tremula, and at the latter a pair of Chamædoreas. All plants put through tables should have some similar kind of arrangement round the base, otherwise they would look unfinished, and, indeed, anything but ornamental.—Miss Hassard, in *Garden*.

Large Strawberries.—Some of the largest strawberries we have ever seen were brought under our notice this week. They were gathered in the garden at Stansty Hall, North Wales, the seat of the Right Hon. Lord French. The sample was not named, but appeared to be a variety known as Duc de Malakoff. Some of the largest fruit measured 7¾ inches in circumference.—*Gardener's Record.*

Vegetable Wax.—This was the subject of a paper read before the Natural Science and Statistical Society of Eastern Asia, at Yeddo, Japan, on Dec. 6th, 1873. The delivery of the paper was accompanied by an exhibition of specimens of the material in different stages of preparation. The wax tree is in appearance not unlike our Mountain Ash, and the bean-shaped berries, in size about that of Lentiles, are gathered in the month of October. After being softened by the action of steam, to which they are exposed in stone receptacles, the berries are pressed, and the wax obtained. The substance is then purified by boiling, first in lye, and then in pure water, after which it is bleached in the sun for about fifteen days, in which latter process it becomes white, and is ready for use or for exportation. The vegetable wax, thus prepared, is scarcely distinguishable—except by a tallow-like odor—from beeswax, and is exported from Japan to England in considerable quantities.

The Exeter Rose Show.—I have never seen a closer fight than in the class for the £20 prize; and never have Judges had a more difficult and responsible task enhanced than by the fact that there was a drop in the second prize to £5; and for the season a fine lot of bloom was staged, the competitors being Messrs. Paul & Son, Turner, Cranston, Keynes, Prince, and Cant—the very *creme de la creme* of our professional exhibitors. After a long and careful examination the first prize was awarded to Messrs. Paul & Son, their box of bloom being more even and better finished. In it were remarkably fine blooms of Etienne, Levet, Charles Lefebvre, Centifolia rosea, Duc de Rohan, Louis van Houtte, Bessie Johnson, Cecile de Chabrillant, Souvenir de Paul Neron, Cheshunt Hybrid, Marie Baumann, Comtesse d'Oxford, Madam Lacharme, Louise Peyronny, Baronne Rothchild, and their own seedlings—Reynolds Hole, a very fine dark rose, and which will worthily represent the rosarian whose name it bears; Wilson Saunders, a very fine flower of the Charles Lefebvre type, but free from any velvety shading; the Shah, a seedling from Duke of Edinburgh.—*Journal of Horticulture.*

The Victoria Regia.—The *Journal of Horticulture* says: "The Victoria Regia has commenced to flower in the Royal Gardens, Kew, and will continue till the end of October. The bud opens between five and six o'clock in the afternoon; the petals are then pure white, and a delicious perfume is emitted. The flower closes in the morning; and when in the evening it again opens, the petals are tinged with red, and they then become reflexed. The plant is raised from seed every year, and shown about the 1st of January. It flowers in about twenty-six weeks; the leaves have then attained a diameter of 6 feet, and the plant fills a tank 36 feet in diameter. D'Orbigny says, 'When I reached Corrientes, the inhabitants informed me that the seed is a valuable article of food, and being eaten roasted like Maize it has caused the plant to be called Water Maize (Mais del Agua).' M. Bonpland says the farina is not only superior to that of the Maize, but that it is preferred to the finest Wheat and to the flour of the white Cassava."

Browallia demissa as a Winter Bloomer.—I have never seen this old-fashioned plant so attractive as at present in one of the warm houses in the Wellington Nurseries, where it has been full of its pretty blue flowers for some weeks past. It would seem to be most precious as a winter ornament, as, when flowered in summer among annuals and similar plants, it is not so conspicuous or so useful. Seed of this sown in May, and grown rapidly on in a spent dung-bed, and the strongest shoots taken off for cuttings, will flower beautifully through the months of November, December, and January.—R. H. B. in *Garden.*

The Weeping Beech.—This is a tree of great beauty. Our specimen, 40 feet high,

covers an area of 2000 square feet. Unlike many weeping trees, it grows upward and then throws its branches down in all sorts of fantastic shapes. Looking upon it from the outside, it seems like a cathedral built by one of the old masters of architecture. Enter through its branches, which sweep the ground, you find yourself in a natural arbor. Look up, and you see a sturdy trunk with a bark like a rhinoceros' hide, and supporting limbs twisted and gnarled as if nature were trying to show how picturesque and beautiful so crooked a thing could be. No tree in our grounds elicits so many expressions of wonder and admiration.—*Garden.*

HORTICULTURAL NOTICES.

PENNSYLVANIA HORTICULTURAL SOCIETY.

It is proposed to display, at the coming Autumnal Exhibition of this Society, on the 15th to 18th days of September next, in addition to the general Horticultural Collection, a National Dessert Table, composed of the various Dessert Fruits and Nuts of our country, combined with Floral Decorations of the highest character, and all the appliances of silver ware, cutlery, painted china, glass ware and napery to constitute a finished and artistic Dessert Table of Fruits and Flowers. It will be made up of small collections, from as many different contributors as will send the representative products of their respective districts. The name of every contributor, and of each article he contributes, will be given in a catalogue, to be distributed to the many thousands of visitors who attend the Exhibition.

You are respectfully and cordially invited to contribute to the *general display* of Fruits on that occasion, and at the same time to send a small quantity,—sufficient to renew the dishes once during the Exhibition,—of any very choice fruits you may be able to furnish, suitable for a place on the Dessert table.

It is very disirable that we should, *as early as possible*, what contributions we may expect.

A. W. HARRISON,
Recording Secretary.

ILLINOIS HORTICULTURAL SOCIETY.

The following preamble and resolution were passed at the last meeting of the Illinois Horticultural Society:

WHEREAS, The Secretary of this Society expresses his willingness to receive, digest and classify any facts which may be furnished him by the horticulturists of the State, as presenting the circumstances under which any disease may have affected, insects ravaged, or death destroyed, either fruits, trees or plants: therefore,

Resolved, That it is the duty, and should be the pleasure of every member of this Society, and of every other individual horticulturist in the State, to report promptly to the Secretary of the Illinois Horticultural Society, all the information which will contribute to an understanding of the causes which have produced such effects as enumerated in the foregoing preamble: *Provided* always that personal opinions and theories shall in no case be given; but simple and undeniable facts alone shall be reported.

The Secretary, Mr. O. B. Galusha, may be addressed at Normal, Ill.

SOUTH HAVEN (MICH.) POMOLOGICAL SOCIETY.

At a late meeting of the South Haven Pomological Society, Mr Chesebro asked for a description of the Yellows to enable him to detect it in an orchard.

The Secretary replied that the first appearance of the Yellows was usually seen in premature ripening, some two weeks in advance, of one or more peaches on the tree, which peaches were usually high colored and spotted with reddish spots. On opening the peach it will be found unusually red at the pit. The next appearance of the Yellows is seen later in the season, of unnatural shoots pushing out on the limb having the spotted peaches. These little shoots are fine in growth, having small narrow leaves of a pale green color. The following spring tufts of small

wiry shoots appear near the base of the limb, or at the base of the tree on the side affected. The following season usually all the peaches on the limb first affected will prematurely ripen, and the adjoining tree will also be affected on the nearest side. Often several neighboring trees will have on scattering affected peaches. The following season the tree first affected is covered with spotted peaches, and an increase of the small shoots and tufts in all parts of the tree. The following season the leaves on the tree turn yellow, and the tree gradually dies.

W. H. Hurlbut wished to know if there were any Yellows in that vicinity.

The chairman of the committee which was appointed a year ago to examine the orchards in that section, and if any Yellows were found, to have the tree removed, said they found traces of it in several orchards, and where the owner of the orchards had assisted them had removed it. There were some traces of it still left. There were three cases of it where it had made its appearance in three different orchards, where by removing the trees as soon as the diseased peaches were discovered all traces of it were obliterated. Other trees were set in their places, and were growing finely.

The President remarked that since the peaches were unwholesome to eat, and the tree after its first attack unfit for anything but to spread the disease, he would recommend the members to be constantly on the lookout for it and have it instantly removed, root and branch.

MESSRS. HOVEY'S GREAT RHODODENDRON SHOW.

In the notice of Mr. Hovey's Rhododendron exhibition, a day or two ago, an account was given only of a glimpse of the collection, and another visit with more time was necessary to reveal its full beauty. The Rhododendron is pre-eminently an American plant, and one of which Americans can well be proud. The only species of any great beauty besides our own are Asiatics, and consequently can be grown in the open air only in semi-tropical latitudes. Hence every Rhododendron that will stand the the temperate clime is indebted to the American species for its constitution, though the tints of the flowers may be Asiatic. The Messrs. Hovey have made the Rhododendron a specialty of culture for more than thirty years, and their collection was begun in 1844, when Mr. C. M. Hovey selected in England all the hardy kinds then to be obtained, but of the thirty or forty lots supposed to be hardy, some ten or twelve proved really so. These are the sort well known to amateurs, such as *roseum elegans*, *gloriosum*, *bicolor*, *album elegans*, *Everstianum*, *purpureum*, *maculatum*, etc., of which the specimens are now ten feet high, and covered with a thousand bouquets each. The main collection consists of seedlings of every shade of color, raised by Messrs. Hovey.

But the show is grand, indeed. Here are hundreds of plants arranged in groups and rows. An immense cluster of azaleas grouped with rhododendrons; and in another, huge kalmias grouped with both azaleas and rhododendrons. The combination is just what nature would have, and it is really difficult to believe they did not grow where they are as really as the wild azaleas of our woods. All are not even cultivated, for many of them grow directly out of the grassy sward as they are found on the hills of Pennsylvania, or on the banks of the Merrimack, as hardy as the native oak. Truly the show is a most complete mingling of nature and art. It has not the primness and artificiality of that on the Common, last year; yet it has what that lacked, complete forgetfulness that it is art which has accomplished everything, yet concealed to such an extent as to be almost lost in nature. While it is almost impossible to believe such a display to be wholly natural, it is yet just as difficult to believe it to be all art. The plants cover nearly an acre of ground, and the mass of colors so beautifully blended, as seen from an elevated look-out, fully realizes the wonderful beauty of the American garden and to appreciate the taste of the English, which makes this the greatest feature of palatial residences in England. The exhibition cannot be described; it must be seen to realize its magnificence. Messrs. Hoveys' grounds are on Cambridge street, Cambridge, about half way to Harvard College, and the Cambridge street cars from Bowdoin Square pass them every fifteen minutes.—*Boston Paper.*

MARYLAND HORTICULTURAL SOCIETY.

By an advertisement in this number, it will be seen that the Maryland Horticultural Society, will hold its first Annual Exhibition a week before the Pennsylvania. Like the Pennsylvania, it invites contributions from "all the world" as well as the people of Maryland.

DESERET HORTICULTURAL SOCIETY.

A Salt Lake City paper gives a graphic account of the first exhibition held under the auspices of this new Society.

After a tribute to the skill of the Amateur and Professional florists who seem to have contributed in large numbers, the account says:

"Passing onward to the left and occupying the south-west corner of the hall, the visitor's gaze is arrested by a delightful miniature landscape spread out before him. The cool air surrounding this romantic corner bids us tarry. Fans and iced beverages will be welcomed at the farther end of the hall, but are not in requisition here. Those fountains and silvery lakes; those cataracts pouring their crystal waters over the granite crags, and those silent streams that moisten the verdant meadows and flowery lawns, send up their copious distillations to rarify and perfume the air. We must linger still to inhale the refreshing atmosphere. We survey the miniature mountains, hills, vales, plains, caves, rocks and cliffs; the fern and moss-covered slopes; the castles and cultivated grounds; the cedar, pine and acacia groves; the cactus and sage in their native wilderness; and anon espy, as peering through an opening in some dense and far distant jungle, a wolf or wild-cat, or high up on some rocky pinnacle, a mountain lion or sheep. But here, behold the horse and there the durham or devon milker; and near by the farmer's cot, or the palatial Summer resort of a denizen of the metropolis; and fancy,

'Her magical pinions spread wide,'

Lures us into the illusion that all this is reality —a bird's eye view of some fairy land

'Where mortals weep no more.'

But in a moment, while yet involuntarily roaming in the realms of imagination, we are roused from our reveries by the charming accents of a human voice.

"'And how do you like our miniature landscape?'

"Of course this brings us to *terra firma* in a twinkling, and turning, we greet the lady architect of the lovely scene, in the person of Mrs. Gen. E. M. Barnum. When fairly recovered from our clairvoyant excursion, and taking in the situation at a glance, we reply.

"'It is lovely, Mrs. Barnum—most happy in conception and perfectly charming in execution.'

"We select from a large number of items, a few that may interest the general reader as showing the condition of Horticulture in Utah.

"The cabbages, cauliflowers and lettuce from the gardens of Messrs. Wm. Jennings, Thos. D. Stephens and Bishop Tuttle, were superb. It is confidently believed that our market could without difficulty be supplied with the cauliflower and other kindred and rare vegetables from our own gardens, of quality superior to those now imported from California, and at lower figures.

"Several plates of fine apricots were on exhibition, from Lindsay's garden, as also red raspberries and black mulberries. Also black and red raspberries from Messrs. J. L. Maxwell, W. R. Atkins and J. C. Neilson.

"The samples of gooseberries from Messrs. S. Standford, John Gillies and A. Rynearson, were of rare size and flavor; on some of the plates each berry averaged half an ounce in weight.

"The varieties of native and imported black and red currants, attracted general attention.

"Cherries being mostly gone, a few plates of Reine Hortense. from the garden of Mr. Wm. Jennings, and Blackheart, from Mr. J. Hafen, comprised the selections.

"The largest and finest collection of flowers on exhibition were from the green-houses and grounds of Mr. John Reading. Of the tables in column, laden with double and single geraniums, fuchsias, pelargoniums, double petunias, etc., the contributions of Mr. Reading, we connot speak too highly, and it is but justice to state that Mrs. Barnum was much indebted, in her construction of the miniature landscape, to the skill and personal assistance of Mr. Reading.

Bouquets and baskets of flowers, by Mrs. Reading and daughter, were universally admired as also the groups of cut flowers, in pots and boxes, from Mr. M. Christoffersen, gardener of Mr. D. F. Walker; from Mr. Ed. Laker, gardener of Mr. Rob. Walker; from Mr. S. Stanford, gardener of Mr. Wm. Jennings; from Mrs. Bishop Tuttle; from Mr. Harry Luff, and from Mr. Peterson, of Provo.

"A special prize was awarded on a pot of flowers brought by a little girl about six years old, who was two modest to leave her name.

"The basket of flowers proffered to the young lady under eighteen years of age who could tell the most names of the different flowers on exhibition, was awarded to Miss Sarah Ann Walker, daughter of Mr. D. F. Walker, who gave the names of eighty-one of the varieties.

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HINTS FOR OCTOBER.

FLOWER GARDEN AND PLEASURE GROUND.

Bulbs, as Hyacinths, Tulips, Crocus, etc., if not already planted, should be at once proceeded with. A very rich sandy soil is the choice of the Tulip and Hyacinth. They should be set about four inches beneath the soil, and a quantity of sand put around each bulb. After planting, a covering of manure may be put over the place of planting, for reasons already given. Ground-mice—some say moles, also—are at times very destructive to these roots. No efforts should be spared to trap and destroy them. It is a very good plan to soak peas in water till they begin to swell, when they should be rolled in arsenic, and buried in different parts of the soil near the beds. All the different kinds of lilies, including the most beautiful and rare kinds of Japan Lilies, are perfectly hardy, and beds of these are among the handsomest and sweetest adornments of the pleasure-ground through summer and autumn months. A very dry soil does not suit these. A rich and strong loam, rather inclining to dampness, will grow them to perfection.

When the leaves have fallen, many will commence pruning. Properly, summer is the proper time to commence pruning; the winter should be the time the job commenced in summer should finish. The object of pruning in the winter season is to impart vigor to the tree, or to cause branches to push next season strongly and vigorously in such parts as it may be desirable to have them. A tree which is already growing very vigorously, and is shapen according to our best wishes, can receive no advantage from pruning now. Any branches that cross each other, or that are otherwise misplaced, may, however, be cut out. Any trees that have arrived at maturity, and have some parts apparently weakened or decaying, should, on the other hand, have a thorough overhauling now. All scars made by the sawing off of any of the larger branches, should be painted over to keep out the damp, and to preserve it sound till the new bark shall grow completely over it. This is a very important matter. Many fine trees are prematurely lost through this neglect. The wood decays, water enters, and the tree soon becomes hollow and worthless. We always use paint, but others use gum-shellac dissolved in alcohol, a bottle of which they always keep on hand, ready for the purpose.

This is also a good time to cut away any trees that it may be disirable to take down. When a place is first planted, many common trees are set in with the choicer ones, with the design of taken them away as the better ones grow. These, when becoming thick, should be gradually thinned out.

Hedges, also, will need attention. Those a year planted should be pruned where it is desired to make them shoot vigorously and freely. Older hedges that have been pruned properly in summer will need little now besides trimming slightly to preserve their desired shape. If an old one is in such a condition that it seems to require a good winter pruning, it may be set down as good for nothing, and not worth further attention. The better plan would be cut it down to the ground and let it shoot again for a better summer treatment in future. It is very important that no weeds or

litter of any kind should be left near hedges. Under such protection mice harbor, and feed on the plants, often to the utter destruction of the hedge. Those who keep their hedge-rows clean, never, so far as our observations go, suffer from mice. The clippings of hedges and small prunings of hedges may be put to a very good use in improving the soil. Underdraining is now universally admitted to be one of the best means of permanently improving land. Where tiles cannot be conveniently had, small stones or similar waste rubbish may be thrown in the bottom of the ditches, and over these loose materials the prunings of the seasons placed thinly, but firmly, before throwing in the soil. They keep the soil out of the drainage, and, as they decay, absorb a great quantity of moisture, which, in a dry time, give off a great portion again to the dryer soil. Even where tile are used, they may be employed to advantage.

Flower-beds should have attention at this season, so far as preparing them for flowers next season is concerned. A very rich soil is improper, as it encourages too much leaf growth ; while in a poor soil they will not grow at all. Flower-beds generally do better with concentrated manure, such as guano, than with rank, unfermented material. The very best soil for flower-beds is top-soil from an old pasture, which has been in a heap to rot for a season. Verbenas, especially, revel in such a situation. There are a few things that give greater interest to gardeners than rustic seats, arbors and vases. This is the proper season to collect materials for the work, which consists of the ugliest and crookedest pieces of wood that can be got.

Roses, and many other things which flower from last season's wood, and which wood it is therefore important to preserve, may be saved by having the branches laid down under the soil. The tenderest kinds of roses may be preserved successfully in this way.

In preparing the grounds, it should be remembered that grass and trees are not only required to grow therein, but that they must *grow well.* The top soil of the lot is often covered by the soil from the excavations, trusting to heavy manuring to promote fertility. But this is a too slow and expensive process. The top surface soil should, in all cases, be saved and replaced over the baser soil. Also, where it is necessary to lower a piece of ground, the top soil should be saved to place over again. The depth of the soil is an important matter, both for the trees and the lawn. It should be at least eighteen inches deep. In shallow soils grass will burn out under a few days of hot sun. In a soil eighteen deep a lawn will be green in the driest weather. For the sake of the trees, also, the ground should be not only deep, but rich. If from thirty to forty loads of stable-manure to the acre could be appropriated, it would be money well spent. Life is too short for it to be an object to wait too long for trees to grow, and planting large ones is an expensive, as well as unsatisfactory, business. A tree in a rich and deep soil will grow as much in one year as in five in a poor one. So in preparing a lawn, it is fortunate that while aiming at the best effects, we are helping our trees also. It is generally best to sow for a lawn than to sod, where much of it has to be done. The edges of the roads must, of course, be sodded, the balance neatly raked over and sown The best kind of grass to be employed in seeding is a disputed point ; and it will, no doubt, depend in a great measure on the locality. Philadelphia and northward, the perennial rye grass is excellent. It commences to grow very early, and has a peculiarly lively, shining green. South of Philadelphia it is very liable to get burned out in summer, and the Kentucky Blue grass would be much better. It is much the best to have but one kind of grass for a lawn, provided it is suited to the locality. A mixture of kinds is apt to give a spotted and variegated character, not at all pleasing. Some people like to see white clover growing thickly in a lawn, and others object to any thing but green. However, if a good grass-rake is employed freely in summer time, the heads of these flower may be kept from expanding. Where there is a prospect of a month of growing weather, lawns may still be sown with grass seed,—the clover, where used, to be kept for sowing in April or March next. A small quantity of rye should be thinly sown with the grass, which, by the shade it affords, will prevent the grass from being thrown out by the frost. The rye must of course, be closely cut in the spring, to allow the grass to get ahead of it. Planting of deciduous trees and shrubs may be proceeded with this month to great advantage, and next month well sheltered from cold winds, wherever the winter is not likely to be very severe. In cold, bleak spots, or where the temperature is likely to be below 15 deg. above zero, planting had better end with November. The risk of loss from fall planting,

even in unfavorable places, is much lessened by severe pruning or shortening in.

Tender plants or shrubs, evergreens or deciduous, that are hardy enough after getting fully established, should be protected with a thin screen of branches, or any litter that will break the full force of the wind or sun's rays. The Morinda Spruce, Abies Douglassi, and Silver Fir, are perfectly hardy with the thermometer much below zero, when they have thus been nursed up eight or ten feet high. Herbaceous plants, such as Pæonies, Dicentra spectabilis, Phloxes, Delphiniums, etc., are better to be protected around the roots with some litter ; for, although perfectly hardy, the protecting them from frost permits their roots to grow throughout the winter, and they push earlier and stronger in spring.

Persons who have small places, are often exercised as to the best way too lay them out. A too common error is to attempt too much. Having read of fine specimens of taste, or imbibed a love for the art from superior work on Landscape Gardening, or some friend's extensive country-seat, it is quite natural to wish to make the most of a a limited plot. And this making the most of the thing implies a good deal, while it leads into many errors. The *relation* of the *means to the end* should never be lost sight of, and nothing attempted that has not some well-defined object.

When a house is built, the first object is to connect it with the public road, with the stable, and with the offices. In laying out these roads, convenience and beauty must be consulted. The first suggests to go "straight on ;" the last whispers, "curve gracefully round." Convenience being the chief object, must be respected ; and whatever deviations from the straight line is allowed to the importunities of beauty, should have some evident reason for it. Hence the curve should have its salient point filled with a heap of roots or rocks, or a thick mass of shrubbery ; or, what is still better, the soil should be raised to form a rise or knoll, as if the road had to be taken around to avoid the obstruction. Much may be done for a small plot by this plan of making the surface irregular. A dead level, or a regular plane, looks smaller than it really is. Around the house, it should be so ; as a sudden transition from the delicacies of art in the building, to the roughness of nature in the grounds, is offensive,—but at a little distance off, very lively effects may be obtained by taking off a little soil here, and adding there, so as to make the surface broken and irregular. The effect may be further increased by planting the rises, and leaving the lower surfaces bare. To still further give the idea of extent, shrubbery should be planted in irregular masses to conceal the fences and boundaries ; and many objects on the place itself may be partially concealed by planting all with the view of exciting the curiosity to know "how much more is beyond." Besided the mere purposes of shade from the sun, and screen from the winds, large-growing trees should not be employed in decorating the property, as all large objects lessen the apparent size of the lot. Besides, small and medium-growing trees afford a greater variety.

The walks being decided on with a view to convenience and beauty, and the general idea of giving the plot the appearance of as much extent as possible, being kept in view, it may be useful to say something as to the making of walks and lawns, and preparing the soil for trees and vegetables. A carriage-road on a small place should be at least eight feet wide. If so large, or the road so long that there is a chance of carriages meeting, it should be fourteen feet. There is not much use in underdraining roads ; it is better to make provision for the water to run freely over the surface. The road should be dug out six inches deep, and filled up entirely to the surface with rough stones, the harder the better. When full, the surface should be broken very fine with a hammer. The surface stones are usually broken to the size of hen's eggs, but if still smaller, so much the better. Then sand should be put over the broken stone sufficient to fill in the spaces, and over the whole enough gravel or whatever material is employed, to just cover the sand ; so that, when finished, the broken stone will not be more than a quarter of an inch, at most, beneath the surface. Should the road be steep, provision must be made to guard against washing by heavy rains, either by small gutters of stone or brick, or by inserting cross bars occasionally to carry the water over the verges of the road. It may be further remarked, in road-making, that the extent of a lawn is appearently increased by having the walk or road sunk some inches below the general surface. On the other hand, a full walk seems to lessen the space. Small foot-paths need not be dug out over four inches, but in the other respects, they should be constructed as the others. Roads, in all cases, should have both sides nearly, or quite, level

—where one side is higher than the other, besides the unpleasantness to pedestrians, carriages wear such roads rapidly away, by the weight being so much greater on the lower wheels.

FRUIT GARDEN.

Plant fruit trees as early as possible. Deep planting is an injury, though they can be set with more impunity deeper in sand than clayey soil. Mound the earth about the stems; it aids against drawing out by frost. Ram the earth very tightly about the roots, and prune the twiggy branches from the tops. Severe pruning at transplanting is the best insurance against loss.

If older trees have moss, or scale, or have had red spider in the summer, prune away the twiggy portions, and wash with whale-oil soap and sulphur. Grape vine stems may be peeled of old loose bark and washed in the same manner. Grapes may also be pruned at once, and if in a region where they are liable to suffer from frost in winter, bend the stems down and cover with earth. Where Raspberries are also liable to winter-kill, cut back one-fourth of the wood, and bend and bury in like manner. Where Strawberries are liable to draw by frost, it is best to cover them with straw or some dry material. These are often injured by covering with manure or other material which favor dampness, and strawberries are often injured by it. They hate damp.

There is little else to be done in the fruit garden at this season, except gathering and preserving late crops of Apples and Pears, and preserving them for winter.

VEGETABLE GARDEN.

In no department of gardening is a deep and rich soil more important than in this; and at this season we could not give better advice than to lose no opportunity of improving it in this respect. Trenching may be carried on whenever the ground is not frozen over an inch in depth. We are not in favor of that species of trenching which throws the surface-soil to the bottom and brings the sub-soil to the top, in the preparation of a new garden. This should only be adopted for worn-out soils. The proper plan is to throw out the surface-soil on a strip three feet wide, then breaking up the sub-soil thoroughly to the depth of one or one and a half feet. On this broken sub-soil the surface-soil from the next trench is thrown, and so on until the whole be finished. The manure should be so applied as to be worked in with the surface-soil, as the work proceeds. It is little use to attempt to grow vegetables unless the soil is so treated. They may be and are grown on thin soils, not only at a great expense for manure, and a great risk of dying out in a dry season, and of having the roots rotted out in a wet one. As long as the frost, severe enough to injure the celery crop, keeps away, it may have earthings up. Care must be exercised in the operation not to let the earth get into the hearts of the plants, or they will be liable to rot. When the plant has evidently finished its growth for the season, measures should be taken to preserve it through the winter. For family use, it is probably as well to let it stay where it is growing, covering the soil with leaves, litter or manure, to keep out the frost, so that it can be taken up as wanted. Where large quantities are frequently required, it is better to take it up and put it in a smaller compass, still protecting it in any way that may be readily accessible. It always keeps best in the natural soil, where it is cool and moist, and free from frost; and whatever mode of protection is resorted to, these facts should be kept in view. Beets, turnips, and other root crops will also require protection. They are best divested of their foliage and packed in layers of sand in a cool cellar. Parsnips are best left in the soil as long as possible. If any are wanted for late spring use, they may be left out to freeze in the soil, and will be much improved thereby. Cabbage is preserved in a variety of ways. If a few dozen only, they may be hung up by the roots in a cool cellar, or be buried in the soil, heads downwards, to keep out the rain, or laid on their sides as thickly as they can be placed, nearly covered with soil, and then completely covered with corn-stalks, litter, or any protecting material. The main object in protecting all these kinds of vegetables is to prevent their growth by keeping them cool as possible, and to prevent shrivelling by keeping them moist. Cabbage plants, lettuce, and spinage will require a slight protection before hard freezing. This is usually done by scattering straw loosely over. The intention is principally to check the frequent thawings, which draw the plants out of the ground.

In making new vegetable gardens, a southeast aspect should be chosen, as far as practicable. Earliness in the crops is a very great desideratum, and such an aspect favors this point materially. Too great a slope is objectionable, as inducing too great a run of water in heavy rains. The plots for the crops should be laid off in squares or parallelograms, for convenience in digging, and the edges of the walks set with box edging. If water can be introduced, it is a great convenience.

Asparagus beds, after the tops have been cleared off, are better covered with litter, or stable manure. The plants shoot easier for it next season.

Sometimes Broccoli does not head before there is danger of frosts, especially if growing vigorously. If taken up with small balls of earth, and set in a damp cellar they will still perfect themselves.

When the ground becomes frozen, or no other work offers, preparation can always be made for advancing prospective work when it arrives. Bean poles may be made, and if the ends are charred, and then dipped in coal tar, the commonest material will be rendered nearly equal to the best cedar.

COMMUNICATIONS.

DARLINGTONIA CALIFORNICA.—AN INSECTIVEROUS PLANT.

BY WM. M. CANBY.

Read at the Hartford Meeting of the American Association for the Advancement of Science, August 17, 1874.

The natural order of plants "Sarraceniaceæ," is composed of but three genera and eight species. The six species of Sarracenia are found native along the Atlantic slope of the United States, and principally south of Virginia, one species only extending northward to Newfoundland, and thence westward to Michigan. The single species of Heliamphora has been found only in a mountain of Venezuela or British Guiana, while the remaining member of the family,—the Darlingtonia Californica of Torrey*—inhabits a few bogs at an elevation of 6000 to 7000 feet, in the northern mountains of California, beneath the snows of Mt. Shasta. The Sarraceniæ, having their home in a country long since brought under the dominion of civilized man, have been subject to the observations of naturalists for many years. Yet with perhaps a single exception—the S. variolaris—the peculiar adaptations and structural arrangements, which so admirably serve their purpose as insect catchers, have not been thoroughly studied. Indeed it was not until Dr. Mellichamp's most interesting and instructive observations on the above mentioned species were made, that its operations were fully understood, though Dr. Gray has shown us that many of the facts connected therewith had long ago been made public by Dr. McBride and Mr. Elliott.

Having been much interested in researches of this character, and fully cognizant of Dr. Mellichamp's experiments while they were being carried on, it was very natural that I should turn to the nearly related Californian plant, in order to ascertain, if possible, if it had similar insect preying habits. It was first discovered in 1842 by Dr. Brackenridge, of the Wilkes Exploring Expedition. But his specimens were too scanty and imperfect to warrant a description, and it was not until 1851 that the late Dr. Torrey received additional ones in a flowering state. Still two years elapsed before his excellent description and plate were published by the Smithsonian Institution. Even then ripe seeds had not been obtained, and some years still passed before Prof. Gray's description of them completed the systematic diagnosis. A plant so rare, known only as inhabiting a few stations in a rugged, almost uninhabited, and little visited region, while thus affording sufficient material for systematic description, has as yet given but slender opportunity for observation upon its physiological structure and habits; for, while good seeds have been obtained and distributed, the plant has not yet, so far as I know, been cultivated with even moderate success. I have, therefore, had to rely upon an examination of dried specimens and the description of a single observer of the perfect living plant, for an investigation of its insect-catching properties; and what is here offered is not so much to give a thorough description of its structure and functions, as to

*Or the Darlingtonia Californica, a new pitcher plant from Northern California. By John Torrey, F. L. S., Smithsonian Contributions, April, 1853.

draw attention to it in order that fuller knowledge of a very rare and curious plant may be obtained.

All the species mentioned in this paper are "Pitcher plants," so called from the very peculiar structure of the leaves; that part corresponding to the petiole or stem of the leaf being a more or less elongated and dilated tube, in growth erect or somewhat reclining, and capable of holding a considerable quantity of fluid. In Sarracenia this tubular petiole is open at the summit, and is surmounted by a hood which corresponds to the usual lamina or blade of the leaf. This hood is erect in some species, leaving the orifice of the tube more or less exposed, while in others, as in S. variolaris, it is curved completely over the open tube, so much so indeed as to prevent rain from falling or even being blown into it. In Darlingtonia the structure of these organs is essentially different. Here we have indeed the elongated, nearly erect, but *twisted* tube; but its summit is vaulted and exposed, and so bent over in one direction that the orifice is brought directly underneath, and covered over completely by it. It is, therefore, utterly impossible—the leaves being in their natural position—that any rain or bog-water could get into the tubes. Their summits are curiously mottled with green veins and semi-transparent, yellowish spots, in much the same manner as Sarracenia variolaris. The orifice in the largest leaves is a little over an inch in diameter. At the outermost point of this opening, an organ, corresponding to the hood in Sarracenia, but of a very different and peculiar shape, is found, being narrow at its insertion but widening rapidly and soon bifurcating into two divergent laminæ, the whole having a striking resemblance in shape to the tail of a fish. This appendage points downwards, the extremities apparently curving somewhat inwards. It is somewhat mottled, the main color varying from the ordinary green of the other parts to a deep brown or red. The inner side is covered with short bristles pointing towards the orifice. So far as I have been able to make out from the dried plant, the upper edges of these laminæ are rolled over inwards for nearly their whole length to an extent ranging from a sixteenth to a quarter of an inch, gradually widening from the outer extremities to the aperture of the tube, each thus forming a sort of groove enlarging towards, and leading directly into the orifice. Here they join a similar turned-in process or fold, which extends all round the inside edge of the orifice. The last, however, is wider, stouter, and more rolled inward than the first. In this connection another organ is to be noticed,—the wing, more or less developed in all the species of this order, extending from the orifice of the tube to the ground. In the plant under notice it is narrow, perhaps never much over a quarter of an inch in width, and appears in fact to be two wings united for the greater part of their length, but separating within the orifice where they form the folds, already described, and also near the ground where they become dilated and membranaceous, and assume their proper position on each side of what is there an ordinary petiole, springing from the rhizoma; so that in a morphological aspect the whole structure is a singular modification of an ordinary winged petiole, bearing at its extremity a deeply emarginate leaf! So far as the Sarraceniæ are concerned, much the same structure of the wing is discernible; and the view above taken receives additional confirmation from the structure of Heliamphora, the "pitchers" of which have each two separate, yet contiguous wings, running side by side from near the base to the orifice.

Having given this brief sketch of the structure, it now becomes necessary to show how it may be used for the trapping of and preying upon insects. From lack of information and experiment, this cannot be done as yet very satisfactorily. In my inquiries on this point, I have relied upon the evidence of Mr. J. G. Lemmon, who, living in Northern California, has, on several occasions, had opportunities of seeing the plant in its native haunts, and who has most obligingly communicated recent specimens, and given me all the information he could. That it is an insect-trapping plant to as great an extent as other and better known members of its family there can be no doubt. The dried leaves received have in them—often to the height of several inches—the remains of captured insects. In letters received from Mr. Lemmon, he says, "The plant I assure you is a fly-trap of the most successful kind. The petioles are often thirty inches high, inflated, and growing larger at the apex, where they swell into a thin, bladdery, transparent hood projecting out over the wing of the petiole, and pierced by a round orifice beneath, and the true leaf pendant like a swallow's tail from the outer edge of the hood. Within this hood a saccharine fluid is secreted very attractive to insects. The inner side of the

DARLINGTONIA CALIFORNICA.

inflated petiole is clothed with long, stiff hairs pointing downward. Several inches of the bottom of the tube are filled with a clear fluid, (secreted by the leaves it must be) and I have always found any leaf of age to contain a large quantity of insects or their remains in it. While bringing home plants in my buggy to see if I could cultivate them, the Jack Hornets crowded into them so that I had often to slit the leaves with a knife, or turn them over, to let those escape that were above the water."

Mr. Lemmon has kindly sent me an ounce phial completely filled with the fluid "from two petioles." Furthermore there is some evidence in the last "Bulletin of the Torrey Botanical Club," that in one locality the leaves are employed as fly-traps, just as those of Sarracenia variolaris have been. It is scarcely necessary to say, that as it is certain no water can get into the tube by any ordinary means, and as the fluid is always present in healthy leaves, it must be secreted by the plant, as Mr. Lemmon says I have quoted above what he says of a sweet secretion exuded in the vaulted part of the tube which is very attractive to insects. It is fair to say that on a recent visit to the growing plants he did not find it, but he adds that he "remembers distinctly that on former occasions it was quite apparent." I have no doubt that the plant has such a secretion which is used as a lure or bait in the same manner as in its allies, the Sarraceniæ; for in some leaves, long since collected by Miss N. J. Davis, which had been stuffed with cotton evidently while in the fresh state, the cotton, though easily removed from that part of the tube below the level of the aperture, (where, it should be stated, for some distance there are neither bristles nor saccharine secretion) adhered with some tenacity to the upper part, and even to a portion of the appendage outside. The extent of this exudation is very plainly to be seen in many of the dried leaves which I have examined. More to the point however, than this, is the fact that while the bristles of the vaulted part may not be secretive, the whole surface is sprinkled with minute glands, which are doubtless organs of secretion. There is also some evidence of a secretion extending along the wing to the ground, though the weight of the testimony is against it. Mr. Lemmon thinks he has observed no instance of this. But it is fair to say that he has had no opportunity for observation since my letter containing specific inquiries on this and other points was received. There are along the edge of the wing, (or rather along the hollow, caused by the two wings not being completely united to their edges) minute brown glandular bristles, and sparingly intermixed, lighter colored nearly circular bodies, which may be glands; one or both perhaps furnish a sparing secretion. Against this is the strong testimony of Prof. Riley, to whom the insects found in the leaves were submitted, that he finds no ambulatory ones among them, but that they are all such fliers as would be likely to be attracted towards, or arrested in their course by the appendage. Here then we seem to have a bait "that is very attractive to insects," leading directly to "a trap of the most successful kind." Mr. Lemmon further says, "I came upon a patch once in September, and smelled it from afar, so offensive was it. A portion of the leaves filled with insects to the depth of four to six inches, had fallen down, apparently from the weight of the fluid and insects."

But the probable use of other organs must now be considered. Dr. Mellichamp having shown the presence and use of the secretion on the edge of the wing in Sarracenia variolaris, a similar arrangement in Darlingtonia would infer a like use. But even if this be not verified, insects flying near the plant could hardly fail to be attracted by the peculiar bright colored appendage. Alighting upon either lamina of this appendage, they would sooner or later crawl upwards, and would be inevitably directed towards the orifice by the rolls or grooves already described, and by the thick set upward-pointing bristles. Once persuaded inside by either way or attracted by the "honey pastures," (as Dr. Mellichamp well names those parts covered by the sweet secretions) there would be little chance of their escaping; for they would not be likely to fly downwards and so out of the orifice, and from but a small portion of the inside surface could they *drop* out, because if their hold was loosened while upon the *sides* of the vault over the orifice, the fold or rolled up portion on the inside edge of it would retain them within, and I believe would also be sufficient to prevent them from attempting to crawl out. Here, too would come in play the semi-transparent spots, if Dr. Mellichamp's ingenious surmise be correct, that by admitting light in another direction than from the orifice, they serve to baffle the insect in his endeavors to escape. It is evident that these "areolæ"—being successively in the line of the sun's rays—must admit more light and be more brilliant than the opening below; just as numerous windows in a roof would light an uppermost room, very much more than a hatchway in the floor. It is to be noted, too, that these lights admitting spaces extend some distance down the back of the tube and away from the orifice, and this, I believe, will be found to have its effect in luring the insects to their destruction. As a further prevention of escape, we find the inside of the vault clothed with innumerable bristles pointing backwards and downwards, as is the case with all the plants of the order. Thus we see how an insect might be attracted to the appendage, led along by the outside grooves to the orifice, aided by the minute bristles which all point towards it, attracted inside from this or from the wing by the sweet secretion, prevented from falling or crawling out by the inside folds, baffled in any endeavor to escape by the bright areolæ and the retrorse bristles, and finally led to the ultimate and inevitable well of death. Surely there is enough in all this, to say nothing of other points yet unnoted, to tempt those who have the opportunity, to make accurate observations on the functions and operations of this wonderful plant.

One other, and a very curious characteristic of the leaves remains to be noticed. They are all twisted upon their axes about one-half a turn. So far as I am able to observe, all the leaves of a plant twist in one direction; but leaves of different plants may be twisted in opposite directions; and if my specimens are any criterion, there are about as many winding from left to right as from right to left. I have not been able to divine the purpose of this twisting; but that it does subserve some useful purpose in the economy of the plant I have no doubt. Observation of the growing plant will probably furnish a solution.

Finally, I wish briefly to call attention to the floral organs. The flower is solitary, and nodding upon a scape, which, Mr. Lemmon says, is generally about one-third higher than the leaves. Beneath the five sepals and five petals, the twelve to fifteen stamens are clustered around the uppermost and thinnest part of the almost exactly bell-shaped ovary. Under this, and corresponding to the clapper of the bell, is found the five parted style, with its divisions recurved and stigmatose at the extremity, and therefore pointing somewhat upwards under the ovary. Such an arrangement renders it as impossible for the granular pollen of the flower to drop upon its stigmas, as it would be for a marble dropped upon a bell to strike its clapper. Consequently, the flowers are not self-fertilizing. Knowing that the flowers of all the species of Sarracenia must, from their peculiar formation, be cross-fertilized by the aid of insects, it is evident that this plant will be found to be another instance of the same fact; and it would not be at all wonderful if the only remaining plant of the order, the Heliamphora, should be found to correspond to its allies in this respect.

Having thus described as well as I was able with the means at hand some of the functions of this most curious plant, I hope to draw such attention to it, that its wonderful operations may soon be fully elucidated.

[The papers presented to the American Association at its meeting in Hartford this year, were, on the whole, more than of usual value. Those of Dr. Mellichamp (read by Dr. Asa Gray) and Mr. Wm. M. Canby were especial centres of attraction; and particularly that of the latter, treating as it did if not of any original subject, at least of a different plant, and in connection with a topic which has excited popular as well as scientific attention.

In regard to the place of growth of the Darlingtonia, it may be observed that Mr. Brackenridge remarks that there was no swamp or morass where he first found the plant, but only a few narrow wet creeks—meaning probably small runs—bordering streams; and that the pitcher contained water, though impossible to have obtained it from rain or dew.—Ed. G. M.]

SUMMER SHADE.

BY F. R. ELLIOTT.

When you wrote in the August, 1874, number of the *Monthly*, as follows, viz:

"We should like to see our landscape gardeners pay more attention to this idea of summer shade than they do," you struck just the point I have ever in my practice advocated and tried to work up to, but it is under the condition of the knowledge of men who employ landscape gardeners an almost impossibility for us to overcome. We are approached for a plan of a place—we make it after carefully talking with the man, and endeavoring to explain to him how trees grow, and what in a few years will be the size of one now four feet high. We try to tell him all of the future, and our plan is accepted; but when we have worked it out, he is utterly dissatisfied. "Why," he says,

"you have done nothing here to make a show; what have I got for my money?"

All right, we say. We take our pay and a condemnation, and know our work, if only cared for, and the trees and shrubs judiciously grown, and trimmed, will be, in a half dozen years, and afterwards forever, a thing of beauty. But lo and behold, two weeks after our work, we drive by the place and find a working landscape gardener (who knows as much of the future of the effect as he does of Greek) in the grounds, filling in a hundred or more of trees and shrubs, "obtained cheap," he says, from a nursery. They are ten to twenty feet high removed from nursery rows, with few or no branches within four feet of the ground, and the roots a mere handful of fibres. Nevertheless these are planted, and the owner thinks now he has got a grove. An elegant place without wasting time. Two to five years show you the result of this. There are no groups or shades, only masses of incongruity, of trees and shrubs, with and without limbs, choking up both view and air. All of this, as well as your item touching the Silver Maple for narrow streets, needs ventilating; but we who work and write for nothing, unless we consent to follow the ideas of the man who employs us, are ignored.

Many times I have written of the trees suited to the width of streets and the soils that are naturally there; but what matters it? the street supervisor, who hardly knows any tree but a Maple or Elm, is the director, and his help, who give him a bonus for each tree he orders planted, serve his interest to the destruction, rather than benefit, of our city and suburban streets.

BASKET PLANTS.

BY W. F.

Convolvulus mauritanicus.—This is a thickly growing and drooping little plant that produces a great quantity of pretty pale blue flowers throughout the most of the year; indeed by keeping it growing, and removing the oldest shoots as they begin to turn seedy, in order to give place to the young ones, it may be classed amongst perpetual-blooming greenhouse plants. Good specimens of it are of themselves sufficient furnishing for a basket; but if other plants be also required to occupy the space, I should recommend that the central plant be a Ficus, Dracæna, or other erect growing plant, and three or four small Convolvuluses inserted around it. C. mauritanicus is readily propagated by division, and is a greenhouse plant of hardy constitution. It grows well in a window, and blooms most freely in a sunny position.

Echeveria secunda glauca.—Yes, and many other fine Echeverias of the same type make excellent basket plants. Between the wire meshes is their right place, and there their little rosette-like forms have a curious and pleasing effect. They are good window plants, thriving a long time under very trying circumstances, particularly drought, and are usually regarded as greenhouse plants. If well hardened and dry a couple of degrees of frost will not hurt them, but if soft and wet they are easily destroyed. They may be propagated by seeds and leaves, but they emit such a quantity of young plants from their sides, that stock enough is commonly furnished in this way. I saw some baskets very tastefully decorated with this Echeveria at Mr. Bathbun's gardens, South Amboy.

Epiphyllums.—These are splendid basket plants, furnishing a great quantity of lasting and most showy flowers from September till April, just as they are treated in the way of culture and succession plants. E. Russelianum and E. truncatum, both Brazilian species, are the parents of the many fine hybrids we now possess. They may be grown on their own roots from cuttings or grafted on the Pereskia aculeata if dwarfish plants are required, and if tall ones be a desideratum, they should be grafted on Cereæs speciocissimus. When large wire baskets are employed, the plants may be inserted between the wire meshes, when they grow and bloom abundantly, and even when out of flower, the shoots are always fresh and green. They may likewise be planted and tastefully intermixed with other flowering plants in such baskets, and in this way, owing to their pendant habit, greatly relieve any prevailing stiffness. Chatsworth conservatory is famous for its suspended baskets furnished with Epiphyllums, and with which their whole surface and base are decorated.

By the way, I may mention that this famous tropical conservatory in the Duke of Devonshire's gardens, Derbyshire, England, is 282 feet long, 120 feet broad, and 60 feet high, and is only second to Kew Palm House, as purely a plant house in Britain, and as far as my knowledge goes, in the world. It was in these gardens that Mr. Taplin—now manager of Such's Nurseries, South Amboy, N. J.—was head gardener before he came to this country.

At the Earl of Dalhousie's gardens, near Edinburgh, I observed Mr. Dickson the gardener, display these plants to advantage by a simple and ingenious method, when he was scarce of baskets. He merely tied some moss around the pots so as to completely hide them, and with some wire suspended them as required. The effect was excellent as they presented the appearance of being grown in wire baskets lined with moss.

Mr. Croucher, of Hammersmith, the greatest Cacti and succulent plant grower in England, flowers his earlest Epiphyllums twice in one season by keeping them cool when done blooming the first time, then forcing them again, when they as readily bloom as grow. A few good sorts are E. Russellianum, and the varieties rubrum and superbum of the same; E. truncatum roseum, elegans, amabile, bicolor, spectabile, violaceum, Ruckerianum and salmoneum.

Ficus repens (*stipulata*).—This is a common little plant in our greenhouses, where we often find it thickly clothing back walls, or in the society of ferns, for which it is a good companion. It will stand a slight frost with impunity, but prefers a greenhouse temperature, moisture and shade. It is a good basket plant, provided little plants of it have been well established in pots, and from thence transferred to the baskets; wooden ones preferable. As a covering for the base-work or to drop over the margin is its proper place; hence, it should not be used alone. Propagate by cuttings; whole branches strike freely.

Fragaria indica.—This is not a good basket plant, but it is a nice and curious ornament for a bracket in the greenhouse, in which way I have seen it do remarkably well at Kew. It is a slender plant, with small and yellow flowers, and red fruits, and it produces runners about a foot long. It is only an ornament, the fruit being too small and few to be of any service for eating.

Gloxinias.—Suspended pots or baskets I consider the true artificial home for these. They may be grown in pots on stages whilst they are young, but when the leaves become well developed, and flower buds appear, they should be suspended, otherwise justice cannot be given to them in the way of room, as the leaves droop over the sides of the pot further than would be permitted without injury were the plants on a stage. Gloxinias should alone occupy the baskets they are in, but a few pieces of Selaginella or seedling Ferns may be pricked in between the wire meshes with good effect, and no injury to the chief object. They are propagated from leaves, cuttings, and seeds, and require rest in winter, and warmth and moisture whilst growing; and care should be taken to shade them from hot sun, and not to wet the leaves either by means of the syringe or watering pot. Scarlet Gem, Thomas Lobb, Hero, Carlton, Cordon, Celeste, and Comtesse de Nadaillac, are fine erect-flowering sorts; and Rose d'Amond, Imperial purple, Mrs. Fenn, Ne plus ultra, Duke of Wellington, and Bird of Paradise, may be selected as drooping flowered kinds. As such pretty sorts are obtainable from seeds, many good gardeners save the best of these seedlings in preference to maintaining an expensive stock of the fine named varieties. This year we have some plants with three dozen blooms expanded on each at one time.

OUR NATIVE LILIES.

BY C. M. HOVEY.

I notice that a writer in the *Horticulturist*, in speaking of Lilies, and their culture, says, "Our native Lilies grow mostly on banks or sides of hills, showing that a watery, or continual damp soil is not their choice, or healthful for them." Is this true? Our native Lilies are not numerous, especially on the Atlantic slope, though several have recently been introduced from the Pacific. Precisely where they grow there we are not well informed, but so far as our experience goes, the two finest of our American Lilies—L. superbum and L. canadense—grow only where it is moist; and where we have found them in the greatest perfection, it was actually wet. The most splendid specimens of L. superbum I ever saw, 7 feet high, were growing in a swamp, where it was covered with water in spring and autumn, and scarcely dry enough to get at them only from June to September. So with L. canadense, which invariably flourishes in low moist places. L. philadelphicum affects a drier situation, though some of the finest flowers I have gathered from roots growing in low peaty places, on the edges of very wet lands, especially in spring.

I infer from what I have seen of our native Lilies above noted, and I have dug up large numbers, that two of them at least flourished best in rather wet situations, and the other in one by no means dry and sandy. Is this your experience, Mr. Editor? [In nature, yes.—ED.]

A RARE OLD LADY.

BY P.

I had the pleasure, recently, of visiting a rare old lady, who was enjoying her 80th birthday at her hillside home not far from New York. She has a conservatory which she manages entirely alone, scarcely allowing assistance in moving bulky pots and boxes. Among her treasures is a superb show of Begonias of about a dozen varieties, all in perfection of leaf and growth. A Liriodendron climbs to the ceiling, or is helped there, and is looped about until it has reached some twenty or twenty five feet of length. It will, doubtless, soon come to fruitage. The Philodendron, with its white and scarlet bloom, was her special delight. The rarest sight of all to me was, however, a wax plant growing over the third of the ceiling, and holding, at the time, very nearly one hundred clusters of buds and blooms. It was the finest I have ever seen in a home conservatory, and one of the finest anywhere. By kind attention the humming birds had been so tamed that they would enter and sip their honey in close proximity to the owner, showing no kind of fear at her presence.

Large numbers of our country houses could be easily made more home-like and charming by a conservatory heated from the dining room or parlor, with little expense and little trouble. They would contribute to the culture and cheerfulness of the household, as well as to the health. But beyond profit and pleasure, old age can in no way lengthen out its years more surely, or retain its freshness, than by a close alliance with the children of nature. Some natures seem to drink in a vital force from their plants. To let them alone in their gardens a part of each day, is as necessary as to let them sleep.

Before closing, I ought especially to mention the glory of a Marechal Neil Rose, about six feet high, and loaded with its almost perfect blossoms. Art has hardly as yet produced anything in floriculture to surpass this rose. No conservatory is complete without it.

[Our correspondent refers to *Liriodendron* and *Philodendron*, but we are not sure, from his description, that he means these plants.—Ed. G. M.]

ROAD TREES.

BY I. H., LONG ISLAND.

My attention was awakened, recently, by perusal of two articles I read in the papers on the subject of trees by the roadside. All very good to plant trees, but when we give advice on horticultural subjects, we should be very careful to know whereof we speak or write. While all must admire a thrifty symmetrical tree wherever it grows, what more sorrowful sight in Flora's kingdom than to see trees planted by the road and avenue, or in a yard, that have to maintain a sickly existence struggling in wretchedness against a position for which they are not fit, and in an uncongenial soil. There are trees, roses, shrubs and flowers, that are hardy in their nature, can live almost anywhere, and fight powerfully the battle of life, while there are others that need the nursing care of their owners, the ground kept mellow and frequently enriched and then they are gems of beauty. But such are not suitable to plant by the road.

When enthusiastic admirers of trees recommend planting Magnolias, Laburnums, Horse Chestnuts, and other flowering trees, where the soil is poor, as it generally is by the roads, nothing but disappointment must ensue. While some trees will grow in almost any variety of soil, others require to be adapted to their growth, or else they will not succeed. We find the Tulip will scarcely thrive on sandy and light soils, but it appears in all its glory in moist woods and swamps. The red flowered Maple—beautiful where moisture is abundant; with us is scarcely worth planting. The English Ash appears to be of little value, but the White Ash is a noble tree under proper conditions—a rich sandy loam. Its only objection is the roots run too near the surface, and are troublesome if the adjoining land is tilled.

We should study the habits and wants of the trees we plant, and if there is a diversity of soil, give to each one what it thrives in best. With us the Sugar Maple, one of the finest shade trees in our country, lingers along so discouragingly, that unless in clayey or wet places we do not recommend it. The Ash-leaf Maple is on the rejected list, but the Norway gains favor every year. White Maple is the most planted of any variety. Its growth is very fast. The Sycamore, a stately and thrifty tree, its only objection is the abundance of seeds being quite a nuisance. The American Linden or Bass-wood is a very desirable tree for street or lawn planting, but we find it will not succeed on poor soils, neither European Linden, but in a rich loam; and where the ground is kept in good condition by mulching or manure, there is scarcely to be found a more perfect model of beauty.

We may remark here that for thin sandy soils the varieties of poplar will succeed best with us, and the Silver Leaf or White, thrifty as it is, where the soil suits them, will scarce grow at all. And if more than forty years' observation is of any worth, we recommend to tree planters to always, if possible, purchase none but young thrifty trees. The leavings of nursery plots that are left poor and stunted, after all the best are gone, are dear at any price. Some by coaxing with plenty of manure spread on the surface may start at last, but the young and thrifty will outstrip them. What a mistaken idea some have to desire large trees—old fellows that have stood in the exhausted soil of the nursery—scarcely made a foot of growth in five years, and then think they have got such bargains. We always like the first pick as soon as the trees are large enough to remove, but it is fortunate for the nurserymen that there are this class to buy their old trees.

PEAR CULTURE

BY E. P. POWELL.

The supposition or implication that the Pear is in its natural condition when diseased is a wrong done to our noblest fruit. When planted in proper soil, and treated with proper care, it is more easily raised than the Apple. That it cannot endure as great a change of soils, of climate, and as reckless treatment, neglect or abuse, is true. It will thrive with one the right and honest hundreth opportunity. In the ninety-nine other cases it will be a useless, wretched invalid, turning its limbs into crutches, or dying altogether. That the Pear is a delicate child we must allow, and we must work on this supposition if we expect success. Indeed this is the very key to the solution of the whole question. If we have a delicate child we are careful to protect it from harsh changes of weather; give it right food, and a plenty of sunshine and fresh air. I suspect the analogy between the two is very close.

In dealing with the Pear tree we can sum up all necessaries in the advice of Dr. Abercrombie to his patient, "head cool and feet warm." Or to define my position more accurately, let me describe the location and treatment of a few orchards within the sight of my hillside home. (No. 1) is on the creek bottom, rich soil, grown in grass, no annual trimming, dressing, or forking, heavily shaded with evergreens, burnt and blasted with the blight. (No. 2) land well drained, generally ploughed, irregular mulching, or none, growth hurried, allowed to bear as quickly and as much as possible, result, brittle and dyspeptic wood, and a deal of blight; winter freezing, and no regularity of growth. (No. 3) orchard on hillside, well drained, no form given to the growth, heads bushy, and lop-sided, mulched regularly and dug about annually, growth in meadow. (No. 4) growth forced by constant and large manuring, land cultivated, plenty of blight. (No. 5) soil drained, in grass, hay taken off every year, and no return. No blight but one-half the varieties are starving. (No. 6) soil light, and put to oats, corn, &c. No mulching, but constant trimming at any season. The growth is summer pinched, or headed in, as the owner happens to pass among his trees. (No. 7) suckers are eating up the limbs, and confusion reigns. Of course the owner knows just as much about Pears as about children, and has equal "luck" in both cases. There is no use in a fool planting a Pear orchard. The first thing to do is to understand the Pear, and what it wants; what its constitution and temperament are. As near as I can get at this, without claiming superior wisdom or skill, but only an entire friendship for this tree, I should say the following are the essentials to a healthy growth and fruitage:

(1). A well-drained soil—the Pear will not stand wet feet. There is little sin in planting a Pear orchard on low, flat, rich soil. If possible select sunny slopes, or at least thoroughly tile the land. (2). Let the trees be set in the natural soil when perfectly friable, and without manure. (3). Let them be at once mulched with litter or saw-dust, or best of all saw-dust that has been used for bedding, and thus become enriched. Never let the trees be without mulching. Keep their feet warm. (4). Never, or very seldom plough; but annually, in the summer, fork about the tree, in a circle from 5 to 10 feet in diameter. Renew the mulch immediately after the forking. Do not fork deep, so as to disturb the roots, but clean out every grass root. Pears will not endure choking. When the mulch is replaced let it not quite touch the bark. Make it two or three inches thick. This prevents changes of temperature from rapidly affecting the tree. (5). In summer cut out weak growths and misplaced growth, but never

head back the strong shoots that are in proper position. (6). In November, after growth has ceased, head back the strong shoots that you carefully spared during summer. By this system of pruning, you, in summer, force all the strength into the strong limbs; and then you cut away the youngest of this wood before winter. The tree then stands with its feet warm, and its head hardened for the cold and dangerous weather. It is left as hardy as it can possibly be. (7). Adopt no nostrums, such as throwing poisons on the foliage, or cutting off the roots, or hastening ripening by sunning the tree. Unquestionably, a tree that has two-thirds of its roots cut off will ripen its fruit earlier, so also its leaves, and it will soon be deathly sick. So also a tree that is over fed and stimulated, will be well doctored by cutting off a part of its mouths or roots; but far better stop stimulating the tree. Let it grow slowly and steadily. But on no account be content if a tree stands well into the growing season without growth. Examine the collar of the tree and the roots at once. Study out the difficulty. The best physic will be to clear away the grass and weeds. Give it a handful or two of lime and salt. Possibly a fresh mulch is needed, or water has stagnated near it. (8). Give your Pears a plenty of ashes, and occasionally salt. (9). Feed Seckels and a few other varieties heartily. Be careful to feed Flemish Beauty, Bartlett, and most varieties, very sparingly. Let the food be in the mulch, to slowly be fed down by the rains. (10). Prevent young trees from bearing. If the trees are standards, and branches out three feet from the soil, you will get fruit in three years from planting. Sooner than that cut it off in the blossoms. Get growth first; get fruit afterwards. (11). In cutting back, and in the summer pruning, remember that the natural shape of different varieties is not the same. The Nelis must grow willow-like. The Buffam must grow like a Lombardy Poplar, and its upright shoots or leaders must not be cut back. The Seckel must have a globular head. But most of the Pears can be made to approximate a pyramid, without damage to health.

I believe that these rules carried out with love for the tree, that any man can succeed with the Pear. It is a tender tree that needs attention; but not physicing. It will not endure neglect or nostrums. It will pay for study and sympathy. It is a grand gift of God, and is not in its natural condition when diseased.

ODE.

BY MISS HANNAH F. GOULD.

Dedicated to Hon. Marshall P. Wilder, President of the American Pomological Society.

From him who was lord of the fruits and the flowers
That in Paradise grew, ere he lost its possession,—
Who breathed in the balm and reposed in the bowers
Of our garden ancestral, we claim our profession;
While fruits sweet and bright
Bless our taste and our sight,
As e'er gave our father, in Eden, delight.
And fountains as pure in their crystal, still gush
By the Vine in her verdure, the Rose in her blush.

While others into clouds sit to murmur and grieve
That Earth has her wormwood, her pit falls and brambles
We, smiling, go on, her rich gifts to receive,
Where the boughs drop their purple and gold on our rambles.
Untiring and free,
While we work like the bee,
We bear off a sweet from each plant, shrub, and tree.
Where some will find thorns but to torture the flesh,
We pluck the ripe clusters our souls to refresh.

Yet not for ourselves would we draw from the soil
The beauty that Heaven in its vitals has hidden;
For, thus to lock up the fair fruits of our toil
Were bliss half-possessed and a sin all-forbidden.
Like morning's first ray,
When it spreads into day,
Our hearts must flow out, until self fades away.
Our joys in the bosoms around us, when sown,
Like seeds, will spring up, and bloom out for our own.
And this makes the world but a garden, to us.
Where He, who has walled it, his glory is shedding,
His smile lays the tints; and, beholding it thus,
We gratefully feast while his bounty is spreading.
Our spirits grow bright
As they bathe in the light
That pours round the board where, in joy, we unite.
While the sparks that we take to enkindle our mirth,
Are the gems which sprinkle down o'er the earth.

And, now, that we meet, and the chain is of *flowers*,
Which binds us together, may sadness ne'er blight them,
Till those who *must* break from a compact like ours,
Ascend, and the ties of the blest re-unite them!
May each who is here
At the banquet appear,
Where Life fills the wine-cup, and Love makes it clear.
Then Gilead's balm in its freshness will flow,
O'er the wounds which the *pruning knife* gave us below.

TRAINING PLANTS AS STANDARDS.

BY WILLIAM SUTHERLAND, PHILA.

The training of plants suitable to the decoration of lawns, walks &c., particularly for city gardens, has of late years attracted a great deal of attention. And we have often heard sorrow expressed that the standard rose which does so well in Europe would not do as well here. If left out during the winter, the frost invariably splits the stems, and if lifted and potted it seems to injure its flowering qualities, at least such has been my experience in this locality.

And as we cannot have standard roses, we must look for other plants to take their place. What is wanted is such plants as are susceptible of being trained as standards (for that seems to be the favorite shape) that will flower freely during the summer and are easily lifted in the fall. There are a number of plants possessing these qualities. First in the list comes the Lantana, which, for profusion of blossom and variety in color, is one of the most gorgeous plants we have in the garden, and if a little pains are taken to train them at first, they soon amply repay for all the labor spent on them.

The first Lantanas I ever saw trained as standards was at Isaac Buchannan's, in Astoria, L. I., about eight or nine years ago. He had some specimens with 3 or 4 feet clear stems probably 2 inches in diameter with heads 3 to 4 feet through, planted out each side of his main walk. They were one blaze of flowers forming one of the most attractive features of his garden.

As the Lantana is not at all fastidious to soil or situation, it will do at almost any place, if there is plenty of sun, but if large flowers are wished for, the soil can hardly be too rich, blossoming as it does all through the Summer. If it has been planted out its branches should be well shortened back a few days before lifting.

My plan for forming standards has been to choose only the strongest cuttings when potted off and train them up to a single stem, carefully pinching back all the side shoots, and when three or four feet in height allowing them to branch out, and so form symmetrical dwarf trees.

All the strong growing Lantanas readily form good stems, and the weaker varieties, such as Sellowii, &c., can be grafted or inarched on some of the stronger kinds.

Heliotropes can be trained in the same manner, and either plunged or planted out. By cutting them well back in spring and watering them in dry weather, they flower freely all summer, and by lifting and potting them early in fall and cutting the branches well back, flower freely all the winter.

Cupheas grown in this manner form splendid specimens, doing very nicely on their own stems, but grafting Cuphea platycentra or any of the small growing kinds on Cuphea eminens forms specimens very quickly.

Abutilons trained as standards, if the strong branches are kept pinched back all the summer, flower freely all winter. The small growing varieties of Mesopotamicum or vexillarium make splendid specimens trained in this manner on their own stems or grafted.

Vexillarium grafted on Malakoff and vexillarium variegata grafted on Thompsonii. I had a specimen of Abutilon vexillarium thus in an eight-inch pot with a stem four feet in height, its branches drooping down to the rim of the pot forming a neat little weeping tree, on which I counted 450 blossoms out at once. It continued to bloom almost without intermission. Mr. John Sherwood, the well known Florist, informed me that he had excluded this plant from his collection as, on account of its habit, its flowers did not show to advantage, but when he saw my specimen he thought this plan was the only way to grow it.

Erythrinas, Hibiscus, Fuchsia, Salvias, Aloysia, Lemon, Orange, Oleander, Myrtle, Ficuses, Azaleas, &c., in fact almost any of the hard wooded plants can be trained in this manner, and either grown in pots or planted out in summer, soon form splendid decorative plants, either for the garden or conservatory.

RANDOM RECOLLECTIONS, AND RECORDS OF RHODODENDRONS, &c.

BY MR. W. T. HARDING, COLUMBUS, OHIO.

Whenever we think of arboreal beauty, the mind fixes upon certain forms or types, which come up to the standard of what we consider a "thing of joy," or our beau ideal of a tree. And there is, good readers, a beauty and a charm in the comely feature, and a pleasing contour of vegetal life, which oftentimes make us feel proud of our associations with them. A life-long membership in the order of arboriculture has made me somewhat familiar with the ways of the craft, as are most of my brethren, who compose the fraternity of tree lovers. Prone as I am, and have ever been to love the kingdom of nature, and in my admiration for the wonders therein, I have frequently been tempted to draw pen-pictures of the mighty denizens of the forest, and place them in the portrait gallery of the *Monthly*. There are other ligneous beauties in lesser forms I now propose to sketch, and place in position. It is an old axiom, and well said, that "beauty is in the eye of the beholder." "The three graces" I am about limning are probably as beautiful now, in this year of grace, (in my worldly eyes at least) as were supposed

to be the personal charms of "Euphrosyne," "Algaia," or "Thalia," to carnal eyes in the mythical times of the long ago. The three favorites I am introducing will be readily recognized bytheir numerous admirers, as Rhododendrons, Azalea and Kalmia.

There are many varieties of the Rose Bay, or Rhododendron, natives of this country; as are also the Kalmias, or Sheep Laurel. They are handsome broad-leaved evergreen shrubs. The Azalea, or False Honeysuckle, is a deciduous shrub, indigenous to this hemisphere. Rhododendron pontica, and Azalea pontica, are natives of Lebanon, and the mountainous regions of Asia Minor. The two latter were known to the ancient Greeks. Xenophon, when describing the celebrated retreat of the army of ten thousand, mentions them as each seems to have grown abundantly in the neighborhood of Trebizond. The honey eaten by Xenophon's soldiers, when in that vicinity, is said to have produced nausea and delirium. The quaint old Turner, in his Herbal, written in 1568, evidently believed Xenophon's report, and thus alludes to it: "*I have sene thys tre in diverse places of Italy; but care not if it never com into England, seying it is in all poyntes like a Pharesey; that is beauteus without, and within a ravenus wolf and a murderer.*"

What a terrible tree! The pretty Cercis, or Red Bud, was not more maligned by Gerard, whose remarks of this innocent tree were of a most infamous kind. Neither could the fearful Upas, by any possibility, have had a worse character than Turner gave to Rhododendron ponticum.

"Time is the greatest innovator," we all admit, and as it changes, so do we. And if the poor old herb doctor had lived to gather simples until now, his opinions, too, would have changed, I ween. Notwithstanding, its reputation was so foully stigmatized as to be compared to "*a ravenus wolf and a murderer*," we find our more courageous ancestors ventured to admit it within their gardens. In 1763 it was placed among several congeners of good repute, which had preceded it in 1656, namely, R. hirsutum, a native of Switzerland; and R. maximum, in 1736, from this country. In 1752, R ferrugineum, another Swiss species, was introduced. The very singular little myrtle-leaved kind, R. myrtifolia, reached England from Gibralter in 1763. Though a probation of so many years, R. ponticum has peaceably deported itself without once exhibiting any "*ravenous, wolfish, or murderous*" *propensities*. When I last saw it, it had most decidedly a "soft and gentle mein." Its general quiet and uniformly good conduct, have gained for it admirers everywhere, until it has become a universal garden favorite, and is, in reality, "one in whom there is no guile."

When at Kirklees Hall, in Yorkshire, in the year 1834, the writer was then a mere stripling—a tyro in gardening, yet an enthusiastic admirer of nature. Young as I was, I was nevertheless in love with pretty "Flora." First impressions are not always lasting ones, but in that case they have proved so. The recollections of my boyish love, even now, bring back happy thoughts of days gone by. *Ye ancient gardener, of ancient Kirklees*, the warm hearted, honest Job Boothroyde had then passed his three score years and ten, and yet was hale and hearty. He was one of the noblest works of God, and in every sense was "master of the situation" he held. The delight of the venerable old man was to train up the juvenile aspirants in the way they should go, and lovingly teach the young idea how to shoot. The kindly manner with which he imparted information to the youngsters, made it as pleasant for the pupils to receive instruction as it was for the teacher to give it. In grateful remembrance of one of the best of men, who kindly befriended me in my earlier days, I most affectionately bear testimony to the good name of him who has long ago resigned his earthly charge, and gone where all good gardeners go.

Some time during the reigns of King Henry II, and the renowned crusader Richard Cœur de Leon, the Benedictine Monastery of Kirklees gave shelter to a noted outlaw, of whom the poets of the time said,

> "Bold Robin Hood was a forester good,
> As ever drew bow in the merry green wood, &c."

And who is there among us who has not felt all the better, and happier, from perusing the ancient ballads, which tell of the exploits of Robin Hood, and Little John, Will Scarlet, Jolly Friar Tuck, and Maid Marian? It was here that the rollicking hero of ballad lore, according to the legends of the times, terminated his romantic career.

An old chronicler tell us that "*Robyn Hode*" was treacherously bled to death by a nun, who was nursing him, when sick at Kirklees, and he was buried about a bow shot from the little room where he died. The chamber in which he expired, and the grave where tradition says he was interred, are still shown to the curious in such matters, both of which the writer has often seen. The old monastic pile of Kirklees, with its historical associations, are intensely interesting to the antiquarian. While equally so to the tourist, pleasure seeker, or intelligent visitor, is the park, which is justly noted for its sylvan beauty; the woods and groves for their umbrageous shades; the flower beds for their skillful arrangement; the lawns and pleasure grounds for their picturesque scenery; the orchards and gardens for their general productiveness and good keeping. With its extensive ranges of glass structures, it might, without hyperbole, be very appropriately termed a horticultural Mecca, to which many a garden pilgrim has devotedly wended his way.

EDITORIAL.

TRAVELING RECOLLECTIONS.

Baltimore florists seem to have a better time of it than most of their brethren. The writer of these sketches made a number of calls, but this one was gone fishing, another was on a pic nic down the river, and others "were gone to New York," "to Boston," "to Philadelphia," and various other places of which we have some recollections of having heard. We were, however, kindly permitted to run through the establishments by those in charge. It was pleasant to note that they were all generally prosperous, though they might probably be more so if they were all more alive to modern improvements. At Mr. Halliday's (senior), on the outskirts of the town, we found a very large nursery. The city establishment is wholly in the hands of the junior, and the nursery is the leading business here. Only recently taken up, of course much of the stock is young, and other plans immature; but there is a large stock of various kinds saleable, and the prospects for a first-class nursery in time are very good indeed.

Druid Hill Park is sure to be found "at home," though all other attractions are away. The best time to see this is towards evening, when the lights and shadows rapidly change away. The land is so rolling and so beautifully wooded, that this play of the shadows is particularly effective. Like most parks of any extent in American cities, this one is in connection with the city water-works, which gives it the advantage of large sheets of water in the extensive reservoirs around which the most striking drives are led. These lake drives are perfectly level, the roads wide, and excellently made. No matter how warm the day may be, the numerous ravines which flow down to them, with the cooling influence of so large a body of water, make a pleasant breeze, which is perfectly delightful. The main entrance to the Park is a beautiful piece of architecture, but rather small for the size of the road; and this disproportion is increased by two rows of immense vases, which flank each side of the long, straight drive. These brown vases are extremely beautiful, but have rather a lonely look for want of more supporting scenery of an artificial character; but this can be easily added, and probably will be in time. The Park is one of that style called natural, and of which people often boast that it is ready made from the hand of nature, needing nothing but a few roads and walks to make it a perfect specimen of landscape gardening. To be sure these places are oftener greater credits to the gardener's art, little though he does in these cases to deserve credit, than many places wholly made. The defect in these natural parks is chiefly in the great sameness they present. A drive through a hundred acres is usually as good as if through a thousand. Hearing so much praise of the Druid Hill Park as one requiring no aid from the landscape gardener, we were prepared to expect much of the usual monotony. It is a pleasure to say, however, that circumstances have favored a great variety of scenes and peculiar features. The landscape gardener seems to have caught the spirit of change which the natural features present, and we think it more than likely that for a "natural park," Druid Hill will be made in time one of the best in the world. Some of the views from the Park are especially beautiful; that

from Prospect Hill for instance. Here we look down on a small industrial settlement of rare beauty. The place has been wholly formed by the mill owners, who, with a desire to make money, have also been actuated by humanitarian feelings, and spare no pains to educate and elevate all about them. No intoxicating liquors are openly sold in the place; but every encouragement given to mental development and innocent pleasure. Most of the dwelling houses are owned by the workmen, and are particularly tidy and tasteful, with shade trees and gardens about the most of them. With the exception of Salt Lake City, we know of no such a pretty home-like village in the Union. A prominent object in this village is the Women's Boarding House, built by the mill owners. Here girls who have no homes are boarded at a sort of co-operative cost. Each has her own room exclusively and imperatively for herself. The public parlor, in which all company is received, is said to be elegantly furnished, and the whole establishment to equal a first-class hotel, at a much less cost than even the ordinary boarding house.

Not the least of our pleasures in Baltimore was the meeting with old friends, whose grounds it was not convenient to visit. Mr. John Feast, one of the oldest florists in the Union, but who still displays unbounded enthusiasm in the introduction of new things, and the good culture of old ones,—Captain Snow, whose knowledge of Orchideæ, and interest in their culture, renders an hour in his company one of the most agreeable imaginable to a lover of plants in general, as well as of these in particular; Dr. Massey, one of the princes of Maryland Peach culture, to whom we are much indebted for a very intelligent chat on the culture of these and other fruits of the region; and Mr. Marden, a Pear grower to the extent of fifteen thousand trees, now of some years growth, and promising abundant success. By the kindness of Messrs. Sands, Breckenridge and Pentland, we had a round amongst a few suburban places, of which we may speak more in our next.

EDITORIAL NOTES.

DOMESTIC.

The Country Gentleman.—We observe that many of our Editorial Notes this month are based on suggestions derived from the *Country Gentleman*. This is only that it "happened so," and trust it will not offend our many good contemporaries, from whom we often at other times obtain good things.

Weeping Beech.—The notice of the Weeping Beech, recently credited to the London *Garden*, originally appeared in a paper, a couple of years ago, by S. B. Parsons before the New York Rural Club. The want of proper credit by the *Garden* was of course accidental, as no magazine is usually more careful in the matter of credit. We might have known, perhaps, to have given the proper credit, though the *Garden* did not,—but then a magazine has to beg pardon for forgetfulness sometimes, as well as an individual.

Hot Soil for Fruit Culture.—We have long combatted the idea that exposure to the full sun is of any benefit to the roots of our fruit trees,—and in some form or another have strongly urged on our cultivators the necessity of cool soil and shade. Many of our fruit tree diseases, and fruit tree failures, come from an over-heated soil. We often have, of late years, noted how our best observers are waking up to this truth. The intelligent Illinois regular correspondent of the *Country Gentleman*—and by the way we were particularly pleased to note it in our excellent cotemporary—has the following, all bearing on the subject:

> The experience of this year, added to that gained in the drouthy year of 1870, 1871 and 1872, is directing and suggesting a radical change in our old system of small fruit culture for the prairies. Indeed, field culture for the blackberry, raspberry, gooseberry, currant, and the whole bramble tribe, is three years out of four a failure. When the seasons are warm and wet, these plants sucker so much and grow so vigorously and so late, as to insure winter killing; and when the summers are hot and dry as the present, the fruits are burned up before maturity. The most successful small fruit growing is now carried on under the half-shade and protection of orchards, and along the shady side of hedges—the osage orange, like the apple, seeming to illustrate the truth of Shakspeare's lines—that
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> —"Wholesome berries thrive and ripen best
> Neighbored by fruits of baser quality."

Feeding Roots at the Surface.—One of the points we have most strongly insisted on in fruit culture is, that the outcry about the evils of "over-luxuriance" in trees only comes from those who bury manure in the soil. We have stated over and over again that we have never seen fruit trees suffer from *any amount* of manure, when the feeding roots were at the surface and the food surface applied. We have even seen grape vines, pear trees and others flourishing in wonderful luxuriance when manure heaps have been made about their stems. Here is a confirmatory passage from the *Country Gentleman* by one who is himself the author of an excellent book on fruit culture, "W.," of Tyrone, Pa.:

> Earth-closet manure does not seem to have met the expectations of some—most likely owing to differences in the modes of using it. Where applied here on the surface of grassland, it has proved a prompt and energetic fertilizer, and very durably so. It has been equally effective where raked in slightly with weeds, &c. But in a bed where a liberal supply has been mixed all through the soil to the full spade depth, for growing apple seedlings, the plants, although they grow handsomely the first year, seemed to suffer greatly the second. On digging them up the roots were found much discolored; dark, and full of secondary rootlets which had attempted growth and then rotted off—in many cases the main roots were rotten.

Culture of Blackberries.—It is singular to note the progress of experience. Some years ago the intelligent and fearless superintendent of the Experimental Grounds at Washington, Mr. William Saunders, received much obloquy for having written to *Hearth and Home*, that the blackberry was hardier and more prolific when, in a measure "let alone." The *Country Gentleman* now says:

> A. M. Purdy, of Palmyra, recently showed us a plantation of an acre or two of the New Rochelle blackberry, densely loaded with berries and promising a very heavy crop. The bushes had stood seven years upon the ground, and the only cultivation to which they are subjected is a shallow plowing between the rows early in spring, and mowing the grass in which they are enveloped. They are pinched back, so as not to grow more than about three feet high. This treatment keeps them partly in a dwarf condition and insures productiveness. If cultivated more, the growth would become too rank on this rich soil, and they would bear less, become more straggling, and be more liable to winter-killing. This is now well understood by blackberry planters, and is in accordance with the remark which we have heard from boys who gather wild blackberries, "that if they find a bush which the cows have browsed it is always sure to be full of berries." Mr. P. says that with this treatment, the New Rochelle proves more productive on his grounds than the Kittatinny.

Strawberries in Central New York.—A correspondent at Bridgewater, N. Y., writes thus to the *Utica Herald:*

> The Fillmore bears the heaviest foliage and the strongest foot-stalks I ever saw. The Green Prolific is large and good and so is the Charles Downing. The Michigan and Boston Pine resembles the Cheeney. The Jenny Lind in fruit resembles the Fillmore, but not in vine. Napoleon III, Triomphe de Gand, Jucunda and Golden Queen resemble in some respects the fruit of the Agriculturist, but not the plant, that being very fine and with light-colored foliage. The Golden Queen grows very low, and bears a purple delicious fruit. The Russell Prolific and Charles Downing are similar except in shape and fruit. The Pine is similar to the Cheeney. All the above sorts, except the Jenny Lind and Fillmore are much larger, superior in flavor, more prolific, and more hardy, except the Napoleon and Golden Queen, to the following:
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> The Col. Wilder and the Nicanor are similar. The French is merely like Wilson's, except that it is earlier and sweeter than that noted variety. The Downer and the Ida are too acid, but are prodigious bearers. The Royal Hautbois is peculiarly sweet. But it is fit only for the amateur grower. It has run itself into the ground. The Colfax is hardy and an abundant bearer, and will do for those who say they prefer field berries. Barnes' Mammoth is large and good enough, but there are not enough of them. One row of this variety has stood three years between Fillmore and Charles Downing, but now it must give place to its neighbors, for eleven hills or stools have produced only five foot stalks and but three berries. Gazley's Seedling must leave next year if it does not improve in size and flavor.

Ellis' Base Burning Boilers.—We are often asked how to heat porticos, piazzas and other similar places, which are open in summer, and yet may be utilized as conservatories in the winter season. Portable boilers and pipes would be excellent things. From a circular before us, we believe such a boiler as this of Mr. Ellis' would be just the thing for the purpose.

How to Cultivate the Grape.—One of our correspondents, Mr. Roderick Campbell, recently brought to our mind the difficulty some good gardeners labor under of a perpetual interference by those who employ them with the *details*. What would be more absurd than to employ a shoemaker to measure one's feet, and then to insist on directing the knife that is to cut the leather out. It would not matter so much if the attempt to pilot the "gardener" was always in the same direction, as it could be soon proved wrong if it was wrong; but they are often as contradictory as they are numerous. It is often a puzzle to these good gardeners to know where these well-meaning employers get their horticultural knowledge from. Perhaps the following from Max Adeler may afford the clue. It was fortunate that Max Adeler had no gardener, but had to do his own work. That is fortunate for some poor "gardener." The nurseryman who charged "ten dollars" for "advice" strikes us as the most philosophical person in the whole picture:

> I have not been very successful with my experiments in grape culture. I bought a vine some time ago, and the man who sold the cutting to me enjoined me to be careful to water it thoroughly every day; I did so, but it didn't seem to thrive. One day I asked my neighbor Pitman what he thought was the matter with it, and when I mentioned that I watered it daily, he said:
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> "Be gracious, Adeler, that'd kill any one! A grape-vine don't want any artificial waterin'."
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> Then he advised me to discontinue the process, and to wash the vines with soap-suds in order to kill the bugs. My anxiety to know why it still didn't thrive was relieved some time afterward by overhearing a man in the cars remark that "some men kill their grape vines by their durned foolery in putting soap-suds on 'em." He said that all a grape vine wanted was to have the earth around it loosened now and then with a spade. Then I began to dig around my vine every morning; but, one day, while engaged in the exercise, Cooley came and leaned over the fence and said:

"Adeler, you'll kill that there vine if you don't stop diggin' at it. Nothin' hurts a vine wuss than disturbin' the soil around the roots, now mind me. That vine don't wan't nothin' but to be trained upon a trellis an' fastened with wire."

I ordered a trellis that afternoon, and tied the tender shoots of the vine to the cross pieces. The job cost me thirty-four dollars. On the following Tuesday I read in my agricultural paper that if a man wants to ruin a grape vine, the quickest way is to tie it up with wire, as the oxidization destroys the bark. So I took off the wire and replaced it with string. I was talking about it to the man who came over to bleed my horse for the blind-staggers, and he assured me that there was only one sure way to make a grape vine utterly worthless, and that was to run it up on a trellis. In France, he told me, the vine-yard owners all trained their vines on poles, and that was the right way. So I got the axe and knocked the trellis to pieces, and then fixed the vine to a bean pole. Still it didn't thrive very well, and I asked a nurseryman near me to come and look at it. He said he couldn't come, but he knew what was the matter with the vine as well as if he saw it. It wanted pruning. I ought to cut it down within ten feet of the roots and then manure it well. I did cut it down and emptied a bag of guano over it; but as it seemed sort of slow, I insisted on the nurseryman coming over to examine it. He said that his fee was ten dollars in advance. I paid him and he came. He looked at the vine a moment; then he smiled; and then he said "By gosh, Adeler, that isn't a grapevine at all! It's a Virginia creeper."

So I have kind of knocked off on grape culture and am paying more attention to my cabbage.

Fruit Growing in Colorado.—Most of us are interested in knowing how the fruit growing interests of Colorado are progressing. The following from the *Greely Tribune* is the latest news we have:

A day was recently spent in visiting the gardens in Denver and vicinity, to note the progress made in fruit-growing. There were several little vineyards, and a good many vines which two years ago bore well, but this year grapes are scarce. It has been said that last year the grasshoppers eat out the buds of the canes that were to bear this year. Only a few apple trees were found in bearing. Gov. Hunt has a nice place, where he has planted a magnificent grove of cottonwoods, that are over thirty feet high; and intermixed are elms, soft maples, locusts and evergreens. There must be twenty or thirty large silver firs that are entirely thrifty. A great many young evergreens were found planted under cottonwoods doing well, and this way seems a good one. There were perhaps a dozen apple trees of bearing size, but only one had fruit, while several trees seemed to have died. Cherry trees looked as though they might have borne. None of the pear trees had fruit, and neither they nor other trees seemed to have a good chance, for the ground was not cultivated. A strawberry bed was remarkably thrifty. Two years ago Gov. Evans had quite a little supply of apples, and several of the trees died last year, apparently with blight. His cherry trees bore a fine crop this year, but some were blighted, and parts of the trees were dying. The pear trees were doing decidedly the best, although they had been trimmed up high in a barbarous manner. Some trees were fairly loaded, but the fruit was small, and the apples small, much as is remembered of the apples in the Traverse Bay country of Michigan, but such fruit keeps well. The ground is low, rich, and moist, and not what would be considered suitable for an orchard. Siberian crabs were bearing full, but they are of no especial value, and the best that can be said of them is that they are apples. Gooseberries and Currants hang full.

In other gardens a few pear trees had showed from one pear to three pears; and they were small, and sometimes knotty. Pear trees of the same size in the States would be loaded, and the prospect is by no means encouraging. In many cases the trunks of the trees are discolored, and the bark split. All through town there were evidences of the want of a proper management of trees, and hundreds of cottonwoods were dead. Where attention had been given, the growth was good, and the color of the foliage what it should be. A journey will be made to Boulder soon, where it is reported that all kinds of fruit trees are doing well, and that peach trees are loaded with fruit.

The *Greeley Tribune* is one of the papers after our own heart, in this that it believes real progress is best served by telling the truth. Many interested in Colorado would believe that the above would show that Colorado could not grow fruit trees. The fact is, as we saw when we were out there, Colorado will grow fruit trees as well as any part of the world if people would only learn how *to use water*. It takes the professional gardener to explain *why there is a hole in the bottom of a flower pot*. When those, like most of the people in Colorado, who have to grow trees by irrigation, can answer that question satisfactorily they will have fruits as successfully as the Mormons, who have just as dry a climate, but fruit trees everywhere. They have more gardening sense among them; that is the difference. It is gardeners—not Eastern farmers—who are to make fruit growing in Colorado a success; and we humbly believe that a thousand copies of the *Gardener's Monthly* regularly taken would be a good thing for the whole range of Colorado agriculture.

The Chusan Palm (*Chaumærops Fortuni*).—This beautiful half-hardy palm is now in full fruit in the magnificent collection of palms of Messrs. Hovey & Co., of Boston. The plant is one of a fine pair, each about ten feet high. These two plants were placed out doors early in May, and soon after threw out three trusses of bloom on each plant; each truss about a foot long, and very showy, being of a rich golden-yellow. It was immediately observed that the trusses on one plant were much larger and deeper yellow than those on the other; fortunately on examination this one proved to be the male plant, and the other the female. One of the trusses was fertilized by shaking the flowers of the male over it; the others were not touched, yet they have all swelled up their berries, and are now very beautiful; the trusses having grown to the length of two feet, and a breadth of fifteen inches; covered with the seeds or berries which are pea green and as large as peas. It is a most interesting exhibit, and is probably the first truss it has flowered in America, and we don't know that it has flowered in England. In the south of France, where it grows in the open ground, it has flowered and produced an abundance of seed. It may be well to remark that these palms were wintered in a house where the thermometer fell as low as 15°. In fact it is almost hardy, and the plants may be left out on the lawn until December.

FOREIGN.

A Veteran Rose Grower.—At the recent meeting of the Royal Isle of Wight (England) Horticultural Society, the first premium for roses was awarded to Mr. Edward Meehan, who for nearly *forty years* has had charge of the gardens and grounds of St. Clare. During this time he has been one of the leading exhibitors in the above society, and, though the competition has been often severe, he has, with few exceptions, taken the first premiums for roses as a regular thing. We think this feat probably unequalled by anything in the annals of competition. To take a premium for the same thing—and several a season—annually for a period approaching forty years, ought to entitle one to a life interest in it.

The Hollyhock Disease.—This has been a great pest for many years to the American Hollyhock grower. Indeed, it is chiefly on account of it that the Hollyhock has never been anything near as popular here as in Europe. The trouble has now reached Europe, and, as in the case of the Phylloxera, and some others, has proved much worse than in our country. A recent number of the *Gardener's Record* says:

I was sorry to learn from Mr. Chater that the Hollyhock fungus, (*Puccinia malvaccarum*,) has committed, and is still committing, sad havoc among the Hollyhocks. Mr. Chater told me that he lost the greater portion of the plants he propagated in the autumn, and not only himself but other Hollyhock growers were in a like predicament, and that they are gradually losing their stock. The seedling plants growing in the open ground looked well, but there were traces of the parasite commencing to infect them; and when it once gets the upper hand the process of destruction appears to be the work of but a few days only. It is something of a sad outlook for cultivators of the Hollyhock, and there is reason to fear we shall altogether lose this fine summer and autumn flowering plant. It appears to float in the air, and by this means is carried to any part of the country. "Pull up the plants, and destroy them root and branch," is the remedy suggested, and it does appear as if this is the only available remedy. Mr. Chater told me he had tried many remedies, but without avail; that he was afraid nothing could be done to mitigate its effects, but that growers must simply resign themselves to the loss of their plants. There was something inexpressibly touching in the despairing accents in which this fine old florist expressed himself. For nearly half-a-century he has devoted himself to the improvement of that noble flower, the Hollyhock; he has seen it gradually develop from a small confused semi-double flower, with a broad guard petal quite out of proportion to the central mass of florets, into immense, fully double, and well proportioned flowers.

Packing Strawberries for Transportation.—The thousands who eat strawberries in America, where hundreds on hundreds of bushels are gathered and shipped daily, have no idea how rare a luxury they are to the inhabitants of Europe. How many would our people have if the following minute description of the best way to pack strawberries, which we take from an English paper, should be regarded as the best for our people?

Strawberries are the most difficult of all kinds of fruit to pack safely. Wrapping each fruit in a leaf is a good plan, but deft fingers only can perform the operation without brusing the berries. We like to pull them off the plants by the foot stalk, and lay them in the box in the same way, simply placing a flaccid Strawberry leaf between the berries. The boxes should be two inches deep, and before packing, a thin layer of cotton-wadding should be laid on the bottom, and on this soft Vine-leaves; above the fruit, nothing binds so well as the soft Strawberry leaves as before mentioned; and above, layers of cotton or leaves to keep all in their places. It is very important that the Strawberry leaves for packing should be gathered some hours before they are wanted, and allowed to dry and flag in the fruit room as leaves freshly gathered are altogether unsuitable.

SCRAPS AND QUERIES.

WINTER PROTECTION OF TENDER PLANTS.—*T. L., Concord, N. H.*, says: "Will you give us an article on winter protection of shrubs, plants, bulbs, &c., in the next number of the *Monthly?* Can, for instance, Pelargoniums be preserved in a suitable cellar the same as Geraniums? I have not been able to do so, though I have an excellent cellar for keeping other sorts of plants. I have not been able to keep Ivy-leaved or scented Geraniums. Do you believe it is possible to protect many of the more tender sorts of roses, such as Bourbon, Moss, Tea, China

and others, with winter covering? It is an interesting question whether the covering can be so made as to partially exclude the extremes of cold. For instance in this latitude we have the mercury often at 12° below zero, and two or three times in a winter down to 20° or 25°. These changes are mostly sudden, and not often lasting. It is a question if such weather would affect a plant properly protected more than ordinary cold weather. This is against the usual theory, but may be worth thinking of. I believe that many roses usually considered tender could well be protected and kept out of doors. Last winter I tried the experiment of bending down and covering with soil young peach trees, as is done in some of the states of the North-west. I found them dead in the spring, but am in doubt if the burying up of the branches was the cause or not. This is a question of some importance, for many half-tender shrubs could easily be protected with soil if feasible; naturally it would appear to be a better protection than wrapping with straw or similar modes.

"Last winter I gave one of my winter borders an extra protection with hemlock boughs,—the result was a great surprise, for I lost nearly every thing in it. The loss of our Lily-bulbs may, however, have been owing to a covering of manure and litter put on in March. The rest of the border was not covered by the manure, yet suffered in nearly the same way. I usually take my coverings off about April 1st, and did so this year; but during April had warm, sunny days, and freezing nights, which obliged me to recover the plants, not, however, before they were partially injured. This shows the necessity of care in not removing the covering too early. I have spoken of my own experience in these matters simply because it may benefit others, and because it raises some curious questions. The matter of winter-protection in this climate is one of vital importance, and one worth more attention in all the Northern States.

"The pits spoken of in the last number of the *Monthly* are for various reasons not practical for most amateurs, chiefly for want of space for a dry location, and the amount of care required. Is there not some doubt about their being effectual in this climate? At the best I can only succeed by great care. I believe an exhaustive article on the subject mentioned would be as profitable and interesting as any thing you could give your subscribers. Give a description of a cellar suitable for keeping plants, and state what temperature it should be kept at, and if it is necessary or important to have water in small or large quantities standing in it. There seems to be a great diversity of opinion about giving plants any water when they are in the cellar. A list of such shrubs and plants as can be kept in this way would also be useful."

[Questions of detail like those suggested are very difficult to handle. No two persons' circumstances are *exactly* the same, and a very slight difference will alter the whole thing, when any attempt is made to imitate exactly what another does. Thus we had an article in the August number from the pen of Mr. Strong, giving his experience about planting evergreens in August. Here before us is an inquiry from a Georgia correspondent wondering whether he ought to move his evergreens then. Now August in Georgia is a very different thing from August in Boston. It is the *season*, not the *name* of the season that Mr. Strong's argument was intended to reach.

Still we will try to give some general ideas which may help the many, though perhaps misleading some.

First as to a *general principle*. There are two ways by which plants die in winter. In one the moisture freezes, expands the tissue, and bursts it. This is the case in the Geranium, Heliotrope, and many other things. The other is by the drying out of moisture, as in a transplanted tree. Take two Tulips or other trees of equal size and strength and transplant one in November. If the weather following is mild the transplanted tree lives. If it be very severe it dies. The severe frost killed it,—not by bursting its sap vessels, but by drying up its juices. Many plants can therefore be protected simply by keeping them from the wind in winter, or from any force that may aid in drying out the sap. *Light* is a powerful agent in drying out the juices from a living plant, though having little play on the moisture of dead matter. Thus an evergreen standing in snow will often have all its lower branches *scalded*, while the upper branches more in the cold escape injury. This is from the bright light reflected from the snow, and the injury is greater in proportion to the power of the sun-light. That is to say there is more injury from the sun on snow in March than in February, and so on. Protection from the sun in winter, then, is an invaluable aid in preserving things which suffer from the severest weather. We have known

China and Bourbon roses to live all winter without any attempt at protection, where the place was thickly planted with evergreens. This we see in many cemeteries. In ordinary gardens they get killed.

Roses, Hydrangeas, and other things which will endure some frost without being killed, and yet suffer in severe weather, can be easily protected by being dug up entirely—the sappy, immature leaves and branches taken off, and then the plants "laid in" the ground thickly, and yet so as to be entirely covered with earth. The laying in ought to be done on a high piece of ground where the water will fall rapidly away, and not remain to rot the roots or branches. This spot ought to be selected *in the shade*, otherwise the buds are brought forward too soon. Many complain as our correspondent does, that on laying down raspberries, grapes, and other things, they are compelled to bring them out of the ground early, because the buds burst, and yet they often suffer from subsequent cold weather. It so happens that the earth is a better conductor of heat than the air, and thus a buried bud pushes the sooner for being buried. The Chinese understand this, and to avoid the consequence bury their grape canes *two feet deep*, out of the spring sun's influence. Thus they do not burst their buds until the proper time for safe uncovering has arrived. We have not the labor for such deep ditching. It is better to cover, if we can, where the spring sun has little influence. We believe that a large number of plants now unthought of, might be preserved in this way. Possibly Camellias, Azalias, Gardenias, Pampas Grass, and others that will bear a little frost; and the hardier deciduous things like Peaches, Apricots, Figs, &c., certainly might. They would, of course, have to be systematically pruned so as to keep them in shape and size, suited to this system of protection. The first year or two they would not bear much fruit. The digging up and transplanting would check and destroy the flower buds. But after a couple of years the mass of matted roots would be so great that little check would result from the removal.

As to plants in cellars this is usually a question of light and temperature. With a pretty regular temperature of 40°, or 45°, almost any of the ordinary garden plants may be kept. They do not want as much water as plants in the full light, but the soil must never be allowed to become dry. We keep large numbers of plants in a cellar. Pomegranates, Lagerstrœmias, Crape Myrtles, Pittosporums, Oleanders, Abutilons, and so forth. These get water about half a dozen times in the four months. Most of these will live in cellars just above freezing point. Pelargoniums, Heliotropes, and things with soft, green leaves, will not, however, do well in a dark cellar; but we have friends who keep them in a first rate condition in cellars with a little light, hardly enough for one to read by. This light is admitted by a narrow area, leading up to the surface of the ground. A window of course keeps out the air, and *another window*—a foot from the outer one—keeps out the frost. In this cellar and near the window staging is erected, and all the plants on the shelves get some light. In this way all ordinary greenhouse plants are kept in safety. But there must not be too much *heat*,—not over 45°. If they grow it will be blanched and tender. Such a cellar is to preserve, not to grow. If there is any thing that we have overlooked that would be desirable to know, please write again. We are glad to get such suggestive queries.]

PHASES OF HORTICULTURE.—A New York correspondent says: "Horticulture has gone back in ten years. Purchasers rely on dealers, and these do not care to introduce the best things."

[This is the general impression. Much fewer persons visit nurseries to make their own selections than ten years ago. Men who would not think of buying a razor of a pedlar, if they needed a first-class article, yet think it all right in the matter of trees. Not knowing much, they sell only the commonest articles. Of course every one has a right to do what he likes with his own, and to buy of pedlars or not if he choose. But the fact should be borne in mind when our nurserymen are charged with "not being as enterprising as they are in Europe."]

PHOTOGRAPHS.—We have a series of photographs of the greenhouses and graperies of Mr. Adams, at Middleburgh, Ohio, of which from a western paper we recently gave an account. They were designed and built by Mr. Thomas Ottaway, an excellent practical gardener, as well as an intelligent designer. The design is peculiar. There are two long span-roofed houses, united by a dome-like conservatory for large growing plants. This stands in the centre of the space between the parallel lines of houses. The pho-

tographs of the plants show a high state of cultivation.

INDIAN APPLE TREES. - A correspondent (F. W. P.) says: "With what stuff the public is sometimes regaled by our '*intelligent*' press, the annexed scrap may serve to show:"

"A few miles from Fort Madison, Iowa, is an apple orchard growing in the midst of a dense forest. The peculiarities of the trees are, first, the shape of the leaf, which is much larger than the ordinary apple leaf, being long and quite slender; second, they bear fruit of the finest flavor, and parties come for miles around to taste them, and some take leaves and press them to keep as curiosities. An old settler relates that about 1795 Red Wing, a famous young chief, on his return from St. Louis, spent a few days at St. Charles, Mo., then a small settlement, now a flourishing city. While there he was given a few apples to eat, which he seemed to enjoy very much, and asked for some of the trees. One of the settlers procured some twenty-five young sprouts and gave him the necessary instructions in planting them. These he carried a distance of one hundred miles to his home, and planted them around his wigwam. The famous old chief Black Hawk gave this as the true origin of the trees. They are upwards of eighty years old, and, from present appearances, will live many years to come."

[The Indians of Pennsylvania planted apple trees. Those of Iowa may have done so. Some apples have larger and narrower leaves than others, but perhaps the term "ordinary apple-leaf" in the extract given, needs explanation.—ED. G. M.]

JAPAN WAX.—*P.* says: "The vegetable wax, which was the subject of a paper read at Yeddo, Japan, is produced from a tree which does not at all look, as stated, like our Mountain Ash, but more like Populus tremula, as its name Stillingia populifolia indicates, and may be seen in the streets of New Orleans, where it is called Tallow Tree, and extensively employed as a shade tree. The berries, not at all bean-shaped, though of the size of Lentils, are white, and similar to those of Rhus toxicodendron."

[The vegetable wax referred to we understood to be from Rhus succedaneum, and which is not unlike a Mountain Ash in its appearance. Mr. Berckmans had a plant of it years ago. We should like to hear of it.—ED. G. M.]

ASYSTASIA SCANDENS.—"Your correspondent, W. F., referring to Asystasia, must mean A. scandens (Henfreya scandens.)

"I. McP."

TREE CULTURE OF THE GRAPE.—A Georgetown, Mo., correspondent says: "Editor *Gardener's Monthly*:—In looking over some back numbers, I find in 1870, on page 271, an article on tree culture of the grape vine, about which I want to ask a few questions, if it will not trespass on your time too much. I have a grapery of four acres, principally Concords, and some Clintons. They are set eight feet apart each way. Would it be too close to plant trees to each vine? Would it not be too close for cultivation unless the trees were allowed to run too high, and what height would you suggest, and as a fertilizer what would you use? My gardener (who has formerly taken your *Monthly*, in a number of which I saw this article) thinks every vine should have a tree; and I think it will be too close; hence the inquiry or your opinion, and very much oblige. The outside leaves being off, I can't tell the month the paper was published."

[We do not answer this letter privately, because we do not recognize the claim of any one, even though a subscriber, to take up our private time, much less one who never subscribed, and whose only knowledge of the magazine is from a copy owned by one who only "formerly" subscribed, and as the publisher tells us never "paid" for it. We are always very glad to give any information we have to our *subscribers*; but *only* through these pages, where *all* may learn. As this letter may interest others, we answer it here

In tree culture of the grape, we should not allow the trees to grow to *trees*, but by summer pruning, keep the trees down, so that every part will be always within reach. We should also endeavor to trim the trees, so that the branches would be more or less fan-shaped. This will make the row of trees somewhat like an ordinary flat trellis, the branches of the trees almost touching each other edge to edge, when of the distance apart of the vines referred to in our correspondent's letter. The vines must not be left to grow any how over the trees; but be properly pruned and trained just as though growing on any other trellis. One can run the harrow through and keep clean if they want to, when vines are grown this way, or they may leave the whole surface in grass and mow it; but it must never be forgotten that a crop of vines, *and* a crop of grass, require more food than a crop of vines alone. This is especially to be remembered when in addition there is a crop of trees. In all these systems comparative *losses* and *gains* have to be considered. In the tree culture of the grape the advantages are that the grape always does better over living branches; and living trees make a perpetual trellis. These are the gains; the losses are that more manure will be required to make a good crop. In the tree culture of the grape some talent or skill is required. A "dummy" had better leave it alone, or there would soon be lots of articles in the papers about the evils of "neglected culture."]

JAPAN PRIMULAS.—"A subscriber" from, we believe, Philadelphia, says: "You will oblige a subscriber of the *Gardener's Monthly* if you would, in the October number, let me know how to grow and treat the Japan Primula, it being a new plant. I have inquired of many who ought to know, but cannot find out. Does it require plenty of water and shade, greenhouse or pit, shade or sun? I have several plants from seed, and would rather they looked better. I keep them in a shady part of a cool greenhouse. Are they liable to Red Spider? The leaves look as if the fellow was on them, but I cannot see him, even with magnifiers; or is it the effect of too much moisture? I only water with a rose once a day, and sometimes every other. This information I think would be agreeable to other growers. Our *great gardeners* don't like to communicate."

[This and all the Primula family are liable to be eaten up by red spider in our hot and dry climate. A continual use of a powerful syringe, and frequent peppering with sulphur is necessary to keep them clean. No doubt this is the trouble. In other respects it is of easy culture. It is rather at rest in summer time. Partial shade, with only as much water as will keep it alive, is all it then needs. We have an idea it will endure our winters, but know of no one who has tried it.]

DRY.—No rain. This is the burden of all the letters that came to us during August and September, from all save Illinois. It must be remembered that plants which suffer from drought in summer time, are more liable to injury in winter. Look out for the rare things.

PROPAGATING RASPBERRIES.—*J. C., Burlington, N. J.*, says: "Can you favor me as to the best method of multiplying a Raspberry in the most sure and rapid manner? I have a seedling which promises so well, that I am anxious to get it into increased bearing as soon as possible. This is the first season of its bearing. It has put up a few vigorous canes for next year's bearing, a part of which I have headed down for *cuttings*, but they don't seem to strike, and the beheaded canes are very slow in starting side branches."

[Blackberries and raspberries cannot be raised by cuttings of the branches as grapes or currants can. Those who have not had much experience in propagating plants would perhaps make as much of a few blackberry plants, by digging up about the plants as close to the stems as possible, cutting and "hacking" about the roots in every direction. In the spring a large number of plants would spring up from the dissevered roots. Those with more skill could take up the roots in the fall, cut them into pieces of about an inch long, mix with moss or earth slightly damp, put in a barrel or box, and plant the pieces in the spring.]

GRAPE CULTURE IN NORTH CAROLINA.—One of our old subscribers, Mr. C. W. Hoyle, of Charlotte, N. C., who, though always deaf and dumb, writes wonderfully good English considering all, has for some years been studying the culture of the grape, and gives us a brief account of his success. He has seventy-five *varieties*, and keeps them healthly, most of them bearing well every year. He believes that fifty of these are good enough for general cultivation, in that latitude, western being better than east Carolina. He expects to visit the North next year, and will call on any good vineyards he may hear of that he conveniently can. We give with this a letter of Mr. Hoyle's published in his local paper:

"I send you some bunches of Red Siglar grapes, some of Black Worden, some of White Perkins, and some of White Concord. This is the home of the best varieties of the grape, but strange enough, little attention has been paid to grape culture. Cleveland county has about 7,800 vines in cultivation; Lincoln county 6,800; Gaston about 1,400; Mecklenburg 7,800. I have about fifty varieties in Mecklenburg, and they thrive well, but the soil and climate farther west are much more suitable for grape culture. The East has about 100 varieties of grapes, but they are not generally suited to that locality. Five varieties of the Muscadine, (to which the Scuppernong belongs) the Concord and the Hartford will do well in the East. French and German grape-growers tell me that the cultivator should study the kind of manure suited to each variety of grapes. All this region extending west, embracing what is known as Western North Carolina, is admirably adapted to the grape. Can you not persuade your readers to try the experiment? Every farmer should have a vineyard.

"Respectfully,

"CALEB W. HOYLE."

THE EDITOR'S PORTRAIT.—A kind correspondent from Massachusetts sends to the pub-

lisher a letter stating that it is the strong desire of many leading horticulturists in that section, that he give a portrait of the editor as a frontispiece for the annual volume. It is but right to say that the publisher seconds the proposition of his subscribers. As long, however, as the present editor is connected with the magazine, he intends to make it *useful*. It would serve no useful purpose to give his "picture." He has a much more valuable thing than this in his mind for "our chromo" with the December number, which, we are sure, will satisfy all friends.

MARTHA'S VINEYARD.—*B. G.*:—We really do not know whether this popular place on the Eastern coast was so named from having been planted originally with the Martha Grape. Inquire of Samuel Miller, who knows more of Martha's history than anybody else, or perhaps your local newspaper or Bonner's Ledger can tell you.

TRANSPLANTING HOLLIES.—A Lebanon, Penna., correspondent writes us of his success in planting Hollies last spring. They had all their leaves cut off at planting, and soon pushed out a new growth. This is the way Hollies always should be treated. None would then die. Our climate is different from that of Europe. Such a trimming would not be thought of there.

TRANSPLANTING TOM THUMB ARBORVITÆ.—A correspondent who has failed with this would have had perfect success if he had planted it *deeper than it grew before*, even though some of its branches were buried. The same is true of Pyracantha, and many things which have but few roots.

CURIOUS VARIETY OF INDIAN CORN.—A Pottsville correspondent says: "Having become interested in the contents of your paper, read before the meeting of scientists at Hartford on the 14th inst., on the Evolution in Plant Life, I have taken the liberty of describing a variety of Maize which I have been cultivating for three years, and inquiring whether it is new to you. It is of the kind usually called *Pop Corn;* such as is used for parching. A seed of the usual kind was planted four years ago, which produced, on a stalk about 5 feet high, five good, sound ears, it having a tendency to form an ear at each joint, beginning at the lowest joint. At some of the lower joints the ears fail to mature, but that is compensated by some of the upper joints producing two and three. I procured a few grains, and planted, to ascertain whether it was merely a *freak*, or whether it would continue to produce in the same way. To my surprise it has so far followed the same rule. In one instance fifteen ears were produced from one seed, on one main stem and two suckers.

"This is the third year I have planted it, and I have now a number of single stalks about 6 feet high, on which are from four to seven ears, which promise to be well-formed, perfect ears. At some of the joints three ears are growing. I planted too closely this year, and it does not have a fair chance to produce as it ought to, and I could not allow any suckers or off-shoots; and consequently will not be able to show any product except from the main stems."

FORD'S CLUSTER TOMATO.—We received, in the middle of August, some excellent tomatoes, with the following remarks concerning them, made at a recent meeting of the Wayne County (Michigan) Horticultural Society, held at Detroit:—

"The President called attention to some fine specimens of tomatoes on exhibition, and asked what variety they were.

"Mr. John Ford said they were specimens of a seedling of his own propagation, which he would like members to examine, and if deemed worthy of notice to name.

"Mr. Gulley wished to know if Mr. Ford cut his vines in order to make them produce more.

"Mr. Ford said not, but thought the plan possessed some advantages.

"Mr. Osborne wished to know the history of seedling.

"Mr. Ford said that three years ago he noticed among some Troply tomatoes a plant that appeared dissimilar to the others, ripening earlier and loaded with fruit. He had preserved it, and planted the seeds the next season. The plants from these seeds retained in full vigor the characteristics he had noticed in the first plant. He thought some of sending out the seeds for trial that year, but finally concluded to test it another season. This season he felt fully satisfied that it was a valuable addition to our list of tomatoes. What he claimed for it was earliness, ripening two weeks ahead of any variety he had yet tested, and prolificness. He said Mr. Cameron had seen it last season and this, and perhaps he too could tell something about it.

"Mr. Cameron said he had watched the plants for two seasons, and thought Mr. Ford was not claiming too much for it. It ripened earlier than any he had observed, and the points noticed in the first plants he examined was reproduced in those now on exhibition. It was extremely prolific.

"Mr. Taylor said it was certainly a handsome tomato, and if it ripened as early as claimed would be very valuable. He planted the Grant as the best early variety, and then the Troply. He thought the fruit of this appeared somewhat like the Grant, while in some respects it resembled the Troply.

"Mr. Lee said he had planted the Victor, but although it ripened early he did not like it on account of its great liability to rot.

"Mr Ford said the plant was of dwarf habit, making few vines, all of its strength apparently going to fruit.

"Mr. Lee said that the Grant run to all vines, and completely covered the ground between the plants.

"Mr. Adair suggested that it should be named Ford's Early.

"It was suggested that the word 'Cluster' be added, as expressive of the way in which its fruits was borne. This was agreed to, and the plant accordingly named 'Ford's Early Cluster Tomato.' The following is a description of the Fruit, which will be exhibited on the vine: Plants, dwarf in habit; fruit, smooth, fine and very solid; flavor good; vines very prolific, the fruit hanging in large clusters.

"The President wished to know what the members thought about having an autumn exhibition."

NEW AND RARE FRUITS.

BUSTIAN'S (NOT BASTION'S) OCTOBER CLING PEACH.—*An Atlanta, Ga., correspondent says:* "In your August number you notice 'Bastion's October Cling Peach' as being exhibited at the Georgia State Fair in Atlanta last year. The fair was not held in Atlanta last year, but at Macon, and the peach referred to is Bustian's October; it originated on the plantation of a Mr. Bustian, in Fayette county, Georgia. It was named and first disseminated in 1870 by Harden & Cole, of the Atlanta Nurseries, Atlanta, Ga., and is the best late peach we have ever seen. A clingstone of large size, sweet and good flavor; ripens the middle of October, and will keep considerable time after being gathered. It was on exhibition the 4th of November. How far North it will mature I do not know."

August 15, 1874.

PYRUS MAULEI.—We noticed recently the introduction of a new fruit from Japan under this name into English nurseries, which is claimed as a new addition to our fruits, and valuable on account of the delicious aroma it communicates from the dinner table. We have recently seen a colored lithograph, and we are of opinion that it is a form of Pyrus japonica. The name Pyrus "Maulei" is not a botanical, but a nursery name.

FETTERS' PEACH.—A Lancaster, Ohio, correspondent, under date of August 25th, writes: "To-day I send you by mail a seedling peach raised by Mr. John Fetters, and called Fetters' Seedling. Mr. F. lives one mile north of this city, and is a true man, and he is sure that it is a seedling from Lemon Cling. The specimen I send is hardly medium; I have several now before me that are larger, but they are too soft to send. The one I send may not give you a good idea of the peach, as it is very hard. It is as big and beautiful as *Heath Cling*, and unsurpassed by any peach for rich high flavor. The flavor is more like that of a nectarine than anything I can compare it to. Though raised from Lemon Cling yet it is a white peach outside and in, with a faint touch of red on one side. I have just been to see the trees with the fruit on, and truly they are beautiful. In the same orchard are Crawford's Early and the standard sorts, but none of them come up to this. I wonder that the fruit has not been extensively propagated, but it has not.

Mr. F. has no trees for sale and never had any. I hear from him, and from persons that got the fruit, that the tree is a good and regular bearer. The trees now have a fine crop just getting ripe. Freestone. I have no hesitency in saying that I know of no peach superior to it."

[The sender of this had the good judgment to send it before quite soft. It reached us in excellent condition, and two days after was fit to use. There are so many good fruits in the world that we are always unwilling to praise a fruit unless there are some special excellencies that might warrant the addition of a new name to an already burdened list. But in this instance we have cordially to agree with the last sentence in our correspondent's note.—ED. G. M.]

CORNELL'S FANCY APPLE.—A Titusville, Mercer county, N. J., correspondent writes: "I send specimens of Cornell's Fancy and Williams' Favorite Apples to-day. Will have to acknowledge that there is a difference in the two apples, although very little. I also send a seedling of

my raising, fruited this season for the first, tree thirteen years from the seed."

[The apples sent are all Cornell's Fancy. The seedling is excellent. There are, however, many similar ones in cultivation, and we are unable to detect any special points of prominent value over any named kinds in our list.—Ed. G. M.]

White Lady Grape.—We received the following, with the grapes referred to, on first of September. The flavor of the fruit was equal to any that we ever tasted, and if its growing qualities are equally good, it will be a valuable acquisition:

"I send you by mail a new Concord Seedling Grape called 'White Lady.' The vine is equally hardy, healthy and vigorous, and with foliage like Concord. I think it an acquisition, as it is the earliest ripening grape, so far as I know, yet introduced. A decided improvement upon the Martha, being two weeks earlier; larger in bunch and berry, also better flavored and much less foxy. It is several days earlier than Hartford Prolific, and I think the best *very* early grape we have. It was well advanced toward maturity, and in better eating condition than early grapes are usually sent to market on the 10th of August this season—before Hartford had begun to color.

"Geo. W. Campbell."

Mr. Ricketts' Seedling Grapes.—We hear that the seedling grapes noticed so favorably in our pages last year, even surpass the excellence of last season. He has some bunches on some of them ten inches long. Mr. Ricketts deserves great credit for his perseverence in the improvement of the grape.

NEW AND RARE PLANTS.

Seedling Crape Myrtle.—*Miss M. B. R., Washington, N. C.*, with some remarkably pretty peach blossom Crape Myrtles, well worth propagating, sends the following note about them: "I send you by mail some blooms of a pink Crape Myrtle. The color is deeper and brighter than the old pink. The difference is very perceptible when the two plants are seen together. It is a seedling of my own raising. Will you be kind enough to give me your opinion with regard to its nature as a new plant?"

Hydrangea paniculata grandiflora.—This introduction of a few seasons ago grows in popular favor. The flowers are white, in clusters as large as the old fashioned Hydrangea, but of a more elongated form. They appear in July and continue till fall, changing, however, to a pink tint in September. They can be easily dried when cut, and can be preserved as parlor ornaments for winter decoration. Mr. Hayes of this place suggests that the best results will follow a continual cutting down, as the finest flowers are from strong shoots springing from the collar.

Erianthus Ravennæ.—On the grounds of Miller & Hayes is a broad avenue devoted to "odds and ends"—those rare and scarce, or curious things which delight the true lover of trees and flowers. A striking feature of this avenue is a row on each side of Erianthus Ravennæ, which forms the back ground. The leaves are much like those of the Pampas Grass, and so far the effect is the same; but this grows taller, and is entirely hardy. The spikes of flowers, however, are not so silvery or as attractive as the Pampas Grass, and in this respect will never compete with it; but its entire hardiness, ease with which it can be taken care of, and its peculiarly striking character, will always render it a favorite when it becomes more generally known.

New Variety of Catalpa.—*E. Y. Teas* writes: "A large proportion of the shade trees lining the streets in the older portions of our city are Catalpa trees, a very irregular spreading tree, miserably crooked and unsatisfactory in the nursery, and of slow growth at any age. More than thirty years ago, when my brother and I were starting in the nursery business, we procured from Dayton, Ohio, seeds of a variety of Catalpa of much more upright and rapid growth than the variety that we suppose is the common variety. The new variety has much larger foliage, flowers and seed-pods than the common one, and is a *very upright*, rapid growing tree, and must be most useful either for a shade or timber tree. Do you know what variety this is?

[We never heard of any variety of Catalpa. Such a variety as described ought to be valuable.—Ed. G. M.]

Ipomea Mexicana—New Rose.—*Mr. Teas, Richmond, Ind.*, says: "I mail you to-day a small box containing flower, seed-vessel, young shoot and mature leaves of Ipomea Mexicana, or Coccinea, a handsome climber, running 20 to 30 feet, and blooming profusely from June to October, with a large tuberous root tender as a Dahlia. Also bloom and bud of the new Perpetual moss rose, Devil de Paul Fontaine, which we find a superb flower, so dark and fine, and free blooming. This flower was *fully* expanded on the morning of 22d ult., and I fear will not show much when it reaches you."

[They came in fair condition. The Ipomea is not I. Mexicana, nor I. coccinea, but Convolvulus palmatus. The rose is a beautiful one, and a rather novel tint of color.—Ed. G. M.]

Desmodium penduliflorum.—In our last year's volume we gave a notice of this plant from an English source, in which it was spoken very highly of. We have since seen a plant on the grounds of Miller & Hayes of Germantown, which not only confirms the English account of its beauty, but shows it to be admirably adapted to the American climate. The plants were in the full sun, and were covered with their rosy, pea-shaped flowers on pendulous flower stalks.

Azalea mollis, noticed in our report of the Massachusetts Horticultural Society as among the new introductions of the year, has been for some years in the collection of Messrs. S B. Parsons & Sons, of Flushing, N. Y., but its slowness of propagation makes it scarce in general cultivation.

HORTICULTURAL NOTICES.

PENNSYLVANIA HORTICULTURAL SOCIETY.

SEPTEMBER ANNUAL EXHIBITION.

Old Pluvius took his revenge for being crowded out from any part in the management of mundane affairs for seven weeks, by a whole week of liquid indulgence, about which intemperance, however, few complained but the managers and patrons of the Pennsylvania Horticultural Society. It was *their* week, and they were a little put out at the persistent attempts of cold water to exclusively hold the popular mind. Nevertheless the ardor of the competitors was in nowise dampened, and the exhibition as a whole was equal to that of any previous year.

The most original idea was a miniature representation of a dessert table, which the Centennial Horticultural Society proposes to make of fruits and flowers, to be contributed by all nations at the country's great birth-day in '76. If it is proportionately great as this was, it will do. The whole length of the foyer was devoted to it; and the contributions were made up by *eighty-four* persons, and from numbers of States from Canada to Florida and California. The great chandelier, with its numerous globes, crowned the centre, and from this to the table innumerable "strings" of "Smilax" were led to the table below. Under this "canopy" the larger baskets and plateaus of cut flowers were arranged, while smaller designs occupied prominent positions on the "wings." Through and among all small and delicate vases, in almost countless numbers, held little bouquets and sweet flowers, while the fruits between them were every where bestowed. The inception and execution of this plan is due to Mr. A. W. Harrison, for many years and now the Secretary of the Society. It was universally regarded as a grand success.

The next most prominent features were the fruit tables. The quantity, immense as it was, unequalled that of some of the former years; but there were a greater number of exhibitors.

Moreover the fruit was never so perfect as now. The season has been, perhaps, favorable to healthy fruit; but besides this the competition through the whole continent, which this Society has done so much to foster, induces more care in culture in the race for excellence. The collection of Apples from Hoopes Bros. & Thomas were particularly attractive from the great number of the handsome varieties which it contained. Perhaps the prettiest Porters were here, though it is so popular that every collection has some, and generally good. The Gravensteines were perhaps equal to any ever exhibited here, the yellow and crimson stripes being well brought out. Jefferis, another pretty kind which this firm has always favored, did here full justice to their recommendation. Besides, these beauties were well reinforced by such good looking individuals as Benoni, Fall Sweet, Wagener, Jonathan, Maiden's Blush, St. Lawrence, Gaylord Striped and Wine. Mr. Satterthwaite had, perhaps, the handsomest dish of Apples in the room, in the shape of Cornell's Fancy; his Porters were also unexceptionable. Some very large white Apples called "Granny" were prominent from their clear, waxy skin. At a cursory glance we took them for Primates. Samuel Noble had also a number of very beautiful Apples in his collection, besides many rare and not well-known kinds. The Egg Apple must have been laid by some monstrous horticultural bird. It was said to be very good to eat either "fresh laid," or even in a tolerably stale condition. The Starr Apple, which many believe will be a successful competitor with Maiden's Blush. A very pretty dark-red Apple was the Yocum, which Mr. Noble tells us makes also a beautiful tree, and is not only "pretty is that pretty does," but both. The Ox Apple he thinks a very promising Apple; and the Fenton is like Northern Spy, but "may" have some better qualities. The MacLellan, one of friend Noble's long time favorites, was also here, speaking eloquently for itself. He had also a very fine dish of New Jersey's popular summer market Apple, the Hagloe, as well as of Porter, Cornell's Fancy, and others noticed in other collections. The greatest number of varieties were contributed by Mr. Perkins of Moorestown, N. J.

Pears were as the sands of the sea in number. Ellwanger & Barry sent 283 varieties. The ripest and best looking were from Satterthwaite. Last year these had a fungoid scurf over them, but this year particularly clean and beautiful. Mr. Ricketts of Newburg, N. Y., had seventy-six kinds of Pears, among which we noted Souv. du Congress with more red in it than those exhibited by Ellwanger & Barry last year. In Ellwanger & Barry's collection Philadelphians were pleased to see an old friend in *Catharine Gardette*, one of Brinkle's names, and one of which they think more deserves to be said than has been. The Beurre Clairgeaus in Satterthwaite's collection were much admired. Some Kirtlands in this collection also looked, as the young man said of his adored, good enough to eat.

It is not possible in an article limited as this necessarily must be, to notice all the deserving contributions with their special excellence; the Pears by Thomas Grigg of Vineland can, however, not be passed over; his Duchess, Bartlett and Sheldon, were equal at least to the best of these varieties as are usually exhibited. The Apples and Pears from J. S. Harris, Minnesota, were superior to what is generally expected from that high, northern region; and the Nebraska Apples from Mr. Masters did credit to the State, suffering as it has this year from drouth and grasshoppers. There were also excellent fruits among the collections of Philip Alburger, Tobias Martin, Mrs. Baxter, T. T. Mather, Richard Thatcher, A. S. Roberts, R. H. Cummins and Mrs. Robert Buist, Sr. A very large collection of fruit in five cases were shipped from Salt Lake City by the Deseret Horticultural Society; but though the express cars are popularly supposed to come through by the mail trains, and people pay extra charges for that idea, the letters with advice of shipment came a week before the close of the exhibition, but no fruit came to hand.

The Grapes were, perhaps, the finest exhibition ever made before the Society. It has been supposed that only Concord and Clinton can be depended on; but nearly all the generally known kinds were here in excellent condition. Those from New Jersey by Henry Troute, gardener to Senator Cattell of New Jersey, were so very fine that people unaware of what the soil of New Jersey can do when well enriched, could hardly realize that they were native Grapes. His Rebeccas, Dianas, Anna, Alvey, and some others rarely seen now-a-days, were superb. Even the old Catawba, which some had supposed dead and buried about here, turned up in splendid

style under the hands of Mr. P. Foley, gardener to A. S. Roberts, Esq., who also had Concord Grapes rather above the average quality. Mr. W. H. Moon had a very large collection, the bunches not very large, but all admirably ripened. The Christine or Telegraph was particularly admired, both in this and some other collections; and it received much commendation from various growers as one of the most reliable and valuable to grow. New Jersey had some excellent Grape representatives in Concord, from Vineland, and Taylor's Bullitt from Mr. James Reid. We do not think that before we ever saw any bunches of this generally worthless thing fit to look at. These were not much inferior to Delaware; and if the original sender out of this variety ever had bunches like these, there is hope for his reputation yet. Mr. P. Rielly, gardener to Mrs. S. V. Merrick, had the Roger's Hybrids in splendid condition,—there were fourteen kinds in all, and all fit to eat, which cannot be said generally of all Rogers' Grapes. It does seem as if the presiding deity over the Grape department of creation had done its best this season. It may be Bacchus, but whoever it is he deserves credit for the result. Mr. A. Cox, gardener to E. A. Wright, had seventeen varieties of natives. The climax of the Grape exhibition, however, was made by Mr. Ricketts of Newburg, N. Y. These were mostly seedlings; and there is no word in ordinary Grape language that will do justice to them. No. 10, a seedling from Hartford Prolific, was as large as some extra fine bunches of Black Hamburgs are. No. 37 was also of immense size. It was a matter of course for the Fruit Committee to award these one of their highest premiums.

The hothouse or foreign Grape table was also in creditable condition, though not equal on the whole to what has been formerly exhibited. The leading exhibitors were three Germantown gardeners, all living within gun shot of each other: Rielly, gardener to Mrs. Merrick; Cox, gardener to Mr. E. N. Wright; and McCormick, gardener to J. N. Wright. Mr. Rielly's Black Hamburgs, though not remarkable in size, had the unusual merit of having all the berries of one equal size. They were excellent specimens of careful gardening. The Buckland Sweetwater in this collection had large, even sized berries, and proves, when well treated, an excellent variety. Mr. Huster, gardener to J. B. Heyl, had the premium three bunches, which, together, weighed 6 lbs. 9 ozs. They were large, and of excellent flavor; but each berry was below size, and the color not up to the full standard. His Black Barbarossas were also of tremendous size. There were several fine dishes of Peaches, Plums, and other fruits, but nothing that calls for special notice. A brief sketch of the plants and flowers we must postpone for another occasion.

MARYLAND HORTICULTURAL SOCIETY.

This new organization held its first annual exhibition on Sept. 9th, according to announcement, and it appears with all the success its best friends anticipated. Nearly every county in the State was represented by some article contributed; but the bulk of the exhibition was from around Baltimore. The Committee of Arrangement were:

Ezra Whitman, John Feast, Henry Taylor, John D. Oakford, Andrew L. Black, Henry James, August Hoen, Robert J. Halliday, J. Mowton Saunders and Louis McLane.

The halls—for there had to be two, were beautifully arranged similar to those at the exhibition of the Pennsylvania Society. The *American* says:

The hall was opened for the reception of fruits, flowers, plants, vegetables and horticultural tools, from 1 o'clock P. M. on Tuesday until 10 A. M. Wednesday. On Tuesday evening the committee soon found that—so great was the number of specimens of fruits, plants and vegetables contributed—the main hall would not afford sufficient room, and hence it was necessary to display the fruit, vegetables and many of the cut flowers in the spacious hall in the second story, which was soon filled to such an extent that the committee were compelled to crowd such articles as arrived late into the lower hall.

DECORATIONS.

The walls of the hall are adorned with festoons and designs of evergreens. Seven large tables, each extending the entire length of the hall, with aisles between, contain the various plants and flowers, so arranged that visitors are enabled to examine them satisfactorily. The upper hall is arranged in a similar manner. The stage in the rear part of the lower hall is covered with mammoth palms and ferns, and all tables are fully occupied with plants, flowers, hanging baskets and beautiful floral designs, presenting a most attractive scene. The display of

TROPICAL PLANTS,

exotics and ferns is unusually large and beautiful. In the upper hall the cut flowers and floral designs are arranged with exquisite taste. A handsome basket design of fruit and flowers, which attracts particular attention, was the work of Mrs. A. L. Black. It won the first premium in the amateur list. Mr. John Feast exhibited a large floral basket in the lower hall, for which he received the first premium in the professional list. This basket was surrounded with admiring spectators. Mr. Feast also exhibited a large and rare collection of flowers and plants. His son exhibited a fine collection of cut flowers.

Mr. Ezra Whitman exhibited one of the finest amateur collections in the hall. W. D. Breckenridge, of Baltimore county, Mr. R. J. Halliday, James Pentland, A. L. Black, O. Kemp, and a number of other competitors, entered large and choice collections for the professional premiums. The appearance of the lower hall from the main entrance is exceedingly charming, giving to the visitor as he enters a delightful foretaste of the delights which await his participation, at least so far as feasting the eye is concerned.

FRUITS.

The display of fruit is remarkably fine, and Harford and Baltimore counties carry off the palm, both for the number of varieties and their excellence. The principal exhibitor of fruit is Captain Snow, of Harford county, who is represented in the upper hall by fifty-six varieties of pears, seventeen of peaches and fifteen of apples. This seems to be by far the finest lot of fruit on exhibition. The display of grapes from the grapery of Mrs. George S. Brown, of Baltimore county, is magnificent. About twenty varieties are exhibited, and each specimen is first-class. There are several bunches of black Hamburgs weighing over six pounds. The largest single bunch of black Hamburgs is from the grapery of William T. Walters. Mr. J. H. Sullivan, of Fairview Vineyard, Howard county, exhibits a very choice collection of hardy grapes. Mr. Sullivan is one of the most noted vine growers in Maryland, and his varieties were examined with interest by those interested in grape culture. There are of course many other lots of fruit on exhibition not deserving of particular notice.

Among the lists of awarded premiums we note the names of the leading florists, nurserymen, and amateurs of Baltimore. Though the lists of flowers in all the departments were excellent, the show of fruits seems to have been particularly fine. Of this the *American* says :

In the fruit department the display is very fine, particularly in pears and grapes. The display of peaches and apples is not as large as was expected. The collection of pears that are exhibited by Captain Snow, of Harford county, embraces choice specimens of the following varieti es that are particularly adapted to the soil and climate of Maryland : Laurance, Bartlett, Shelden, Des Nonnes, Buffum, Winter Nelis, Urbaniste, Dumas, Seckle, Howell, Flemish Beauties, St. Michael Archangel, Belle Lucrative, Beurre d'Anjou, Duchesse d'Angouleme, General Taylor and Beurre Clairgeau. Mr Breckenridge also exhibits a choice collection. The show of apples and peaches, with the exception of a few seedlings, has already been published. Mrs. George S. Brown has the finest collection of hothouse and table grapes, mainly black Hamburgs and Malagas.

A choice collection of hardy grapes, consisting of such standard varieties as Martha, Delaware, Concord, Norton's seedlings, Jones, and several other fine varieties are exhibited by Col. J. H. Sullivan, of Fairview vineyard, Howard county.

This display, twenty varieties in all, is especially creditable, as they are not the product of fancy gardening, but are the average quality of grapes grown in the extensive vineyards of the Colonel From two varieties, the Concord and the Joy, a pure and excellent make of claret wine is procured, that is winning its way into deserved esteem for flavor and body. This enterprise has led to other vineyards being set out, and as the rolling land along the Patapsco river is well adapted to grape culture, it promises in time to become an important industry.

The following are the officers for the ensuing year.

President—Ezra Whitman.

Vice Presidents, Baltimore City—Wm. T. Walters, Wm. H. Perot and George S. Brown.

Vice Presidents, State at Large—Charles H. Snow, John W. Garrett, Edward Wilkins and A. Bowie Davis.

Treasurer—R. W. L. Rasin.

Corresponding Secretary—John Feast.

Recording Secretary—T. C. Dorsey.

Executive Committee—Henry Taylor, Andrew L Black, John E. Feast, J. Mowton Saunders, August Hoen, W. D. Breckenridge, John D. Oakford, R. J. Halliday and Jas. Pentland.

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HINTS FOR NOVEMBER.

FLOWER GARDEN AND PLEASURE GROUND.

It is not generally known, although repeated over and over again in our journal, that death from cold in winter is as often as not, the effect of impaired vitality during summer. Hence, if a plant is in dispute about hardiness, it is frequently enough to decide the question, to know whether it was free from mildews or leaf blights during summer. Not only these matters, but other things impair vitality and thus prepare for the hand of death, before even the icy times ; and a very dry season is especially one of the worst of these evil influences. The last season was a particularly dry one in many places, and many plants had as much as they could do to hold their own. Amongst these there will probably be great mortality if we have anything like an average hard winter. It will be wise, therefore, if we have anything particularly valuable, to prepare to shelter them from cutting cold, dry winds, or other severe winter conditions.

Almost all young trees are tenderer than they are when older. It is therefore no test of the hardiness of some rare thing, that a small plant is killed in the winter. Silver Firs almost always get killed back for a few years in this section, unless protected, but yet gain a little in strength. After they are ten years old they will endure our hardest weather. So Spanish Chestnuts, English Walnuts, and many others, will die back considerably, until they get strength. Therefore, protect any valuable young plant, if possible, no matter how hardy its reputation may be.

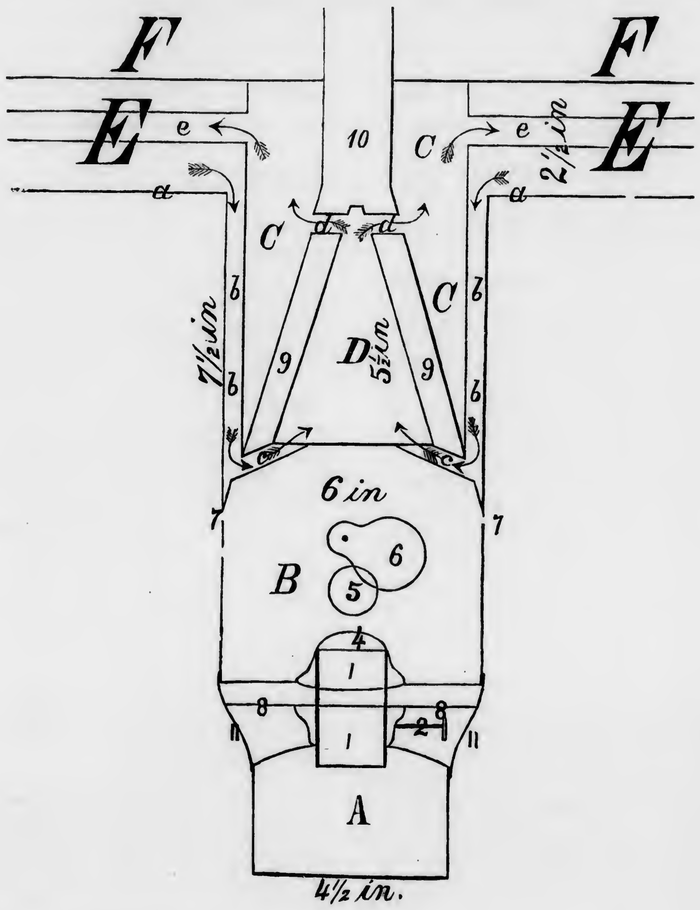
In a recent visit to Baltimore, we visited places where even some tender greenhouse plants—as we should say in Philadelphia—were growing out of doors, as hardy as anything could be, but always in places well protected by trees. Pine trees especially, require to be well protected from wind. Coniferous trees of many genera, usually thought tender, are hardy enough when well sheltered from wind. The Larch makes a hardy and excellent winter screen. Even hardy herbaceous plants, like Phloxes, Chrysanthemums, Pentstemons, and so forth, are benefitted by wind screens. Speaking of herbaceous plants we may say that a top dressing of manure in the winter will be a great help to them.

There is very little to be done in the flower garden in November ; but too often, plants not wanted, and which may be killed by the frost, are left as an eye-sore all winter. Neatness should prevail at any season ; and as soon as the frost has destroyed all useful things, the remains should be consigned to the manure heap, and everything tidied up nice.

WINDOW PLANTS.

Succulents, such as Cactuses, Mesembryanthemums, Echeverias, and so forth, which, in summer time, while growing, require the full sun, may have the shade now, provided they are not kept very warm, and do not have much water. All the sun we can get is wanted for the flowering plants. Light is good to make plants grow, but *sun* light is needed to make them blossom freely. Among the best window plants are Chinese Primroses, Violets, Cape Jasmine, Catalonian Jasmine, Zonale Geraniums, Mignonette, Sweet Alyssum, the Silver Centaureas ; the Old

"Dusty Miller" or Cineraria maritima, Heliotrope, Myrtles, Petunias, Double Wall-flowers and Stocks, and Ferns, when the atmosphere of the room is not too dry. Where plant cabinets can be constructed in bay windows, or attached to rooms, almost anything can be grown, if only the frost can be kept out, and the atmosphere prevented from becoming too dry. Heated air from cellar heaters is a poor way of doing things. A small boiler and pipes can be cheaply constructed to suit most rooms, heated by a common oil lamp. In one of our former numbers, a Texan correspondent gave an excellent plan, which, with his description, we reproduce here.



A is the lamp, made of tin or copper; 1 is the tube, 2 the thumb screw for regulating the wick, 3 a perforated ventilator, and 4 a reflector; al of these are purchased with a lamp burner, and with very little change can be attached to the heating lamp made of tin or copper.

B is a cylindrical enclosure around the flame, to prevent loss of heat. At 7 and 7 it can be attached to or disconnected from the boilers by means of pins or rivets like a lantern bottom. 5 is an opening through which the lamp can be lighted or inspected at pleasure, and 6 is a flat button covering the same.

A and *B* are fastened permanently together by means of three narrow side braces, 11 and 11. Between *A* and *B* is a flat circular piece of sheet metal, (8 and 8) so closely fitting to the tube 1 that the flame cannot reach the lamp; above and below it, between *A* and *B*, is an open space, thus the lamp is kept cool, no matter how hot the flame. So many accidents have occurred from the use of coal oil, that I believe these precautions necessary.

C C C is a cylindrical boiler 6 inches in diameter, and 7½ inches high; it is soldered water tight to the bottom of the reservoir *E*, near the point *a*. The bottom of this boiler is not flat, but is shaped like an inverted funnel; this inclined surface is soldered to the outer wall, a half inch above the point 7, and reaches up towards 10, so as to form a part of the smoke flue; within it and a half inch distant, is

D, another boiler, shaped like a frustrum of a cone, it is full 4 inches in diameter at the base, and 5½ inches high; at the top, a small cover is soldered on which hermetically seals it; at *c c* and *d d* are half inch tubes connecting it with the outer boiler *C* (it is more convenient to first solder *d d*, and afterwards *c c*). Between *C* and D is a circular space (9 and 9) which forms a part of the smoke flue.

E and *E* is the main reservoir of water, and is as wide and long as the plant case, and rests on the lower frame work of the same. It is lined with sheet metal, which is tacked to the sides of the plant case some 6 or 8 inches above the bottom. It should be supplied with water by means of a copper or zinc pipe, with an elbow reaching to the outside; a faucet in the bottom of the boiler *C* is useful to draw off the water. By adding a kettle of hot water from the stove, time can be saved in heating.

F is the sand box or "bench;" the bottom of this should be of tongued and grooved boards, to prevent the sand from falling through and filling up the tubes and boilers. It can be supported by a rib of metal strongly soldered 2½ inches from the bottom of *E*, or by sheet metal supports, 2½ inches long, made fast by solder.

The flame strikes against the bottom of the boiler *D*, and spreading to every side, the heated air and smoke is carried off by the flue 9; in its ascent, it comes in contact with the inclined sides of the outer boiler *C*, and heats it also. The heated water in *D*, as it rises, is carried off by the tubes *d d*, and its place is supplied by pressure of heavier (colder) water through the tubes *c c*.

The heated water in *C* is carried off by the four long tubes *e e*, to the remote corners of the reservoir *E*, and its place is supplied by colder water descending in the circular space *b b b b*.

I should have explained that the circular space *b b b b*, is formed by constructing loose cylinders, reaching from the top of *E* to the bottom of *C*, (8½ inches) and ½ inch smaller than the outer boiler, with punched or notched openings at the base, and having the four tubes *e e* soldered into it near the top. If the water in the reservoir could always be at the same height, these tubes should be very near the top; but as this is impracticable, they had better be near "low water mark."

FRUIT GARDEN.

Many people put off grape pruning till spring; but those who know whereof they speak, tell us that fall pruned ones do much better. When vines are to be protected by laying them under the earth in winter, this is the more necessary.

Pear trees that have not been judiciously summer pruned will require some little in the early winter months. By far too many branches are left on most trees.

When the tree is in leaf, the one branch smothers out the other, and, remembering what we have already said about the value of healthy leaves, few leaves arrive at that perfection necessary to perfect the best fruit. Therefore, prune out enough of the weaker ones to give the rest every chance to develop their leaves to the fullest extent. Also prune so as to assist the plant to a conical form, as this enables the light to act better on all parts of the tree leaves. If trees have been neglected, in pruning too severely to get them to this shape, the result will be to make them throw out shoots still more vigorously from near the parts cut away. When these shoots appear in spring, pull them out while young with the finger and thumb. The current of sap will then flow strongly into the shoots left, and the ratio of growth will in the end be nearly equal through all the branches. The flow of sap through a tree is nearly like that of water through an uneven country. A very little obstruction will turn the course; but that once started soon becomes as great a stream in the new as in the old channel.

Apple trees have a habit, when old, of pushing out sappy shoots along the main branches. These should be cut away in addition to a similar thinning as recommended for the pear.

Dwarf apples and dwarf pears should be ex-

amined now to see what the borer is doing for them. This is the time when they do the most destruction, as they are boring down into the stems for winter protection. A cut with a jack knife *up and down* the stems so as to avoid gird ling as much as possible is the most certain destruction. Then, if in spring, before the parent insects begin to work, oiled paper, or rather tarred paper, be put about the stem near the ground they can be *kept out*. It is strange that with so little time as borer hunting takes, so many thousand trees should be allowed to die from their attacks every year.

Above all, for both apple and pear orchards, we bespeak a liberal dressing—a top dressing of something or another. If no manure is to be had, even common road sand will be found to have a beneficial influence.

VEGETABLE GARDEN.

It is little use to attempt to grow vegetables well, unless the soil is well treated. They may be and are grown on thin soils, not only at a great expense for manure, and at a great risk of dying out in a dry season, and of having the roots rotted out in a wet one. In those parts where the frost has not yet been severe enough to injure the celery crop, it may have another earthing up. Care must be exercised in the operation not to let the earth get into the hearts of the plants, or they will be liable to rot. Where the plant has evidently finished its growth for the season, measures should be taken to preserve it through the winter. For family use, it is probably as well to let it stay where it is growing, covering the soil with leaves, litter or manure, to keep out the frost, so that it can be taken up as wanted. Where large quantities are frequently required, it is better to take it up and put it in a smaller compass, still protecting it in any way that may be readily accessible. It always keeps best in the natural soil, where it is cool and moist and free from frost and whatever mode of protection is resorted to, these facts should be kept in view. Beets, turnips, and other root crops, will also require protection. They are best divested of their foliage and packed in layers of sand in a cool cellar. Parsnips are best left in soil as long as possible. If any are wanted for late spring use, they may be left out to freeze in the soil, and will be much improved thereby. Cabbage is preserved in a variety of ways. If a few dozen only, they may be hung up by the roots in a cool cellar or buried in the soil, heads downward, to keep out the rain, or laid on their sides as thickly as they can be placed, nearly covered with soil, and then completely covered with corn stalks litter, or any protecting material. The main object in protecting all these kind of vegetable is to prevent their growth by keeping them as cool as possible, and to prevent shrivelling by keeping them moist. Cabbage plants, lettuce, and spinach sown last September, will require a slight protection. This is usually done by scatteriug straw loosely over. The intention is principally to check the frequent thawings which draw the plants out of the ground.

In making new vegetable gardens, a southeast aspect should be chosen, as far as practicable. Earliness in the crops is a very great desideratum, and such an aspect favors this point materially. Too great a slope is objectionable, as inducing too great a run of water in heavy rains. The plots for the crops should be laid off in squares or parallelograms, for convenience in digging, and the edges of the walks set with box edging. If water can be introduced, it is a great convenience.

Sometimes broccoli does not head before there is danger of frosts, especially if growing vigorously. If taken up with small balls of earth, and set in a damp cellar, they will still perfect themselves.

Asparagus beds, after the tops have been cleared off, are better covered with litter or stable manure. The plants shoot easier for it next season.

When the ground becomes frozen, or no other work offers, preparation can always be made for advancing prospective work when it arrives. Bean-poles may be made; and if the ends are charred, and then dipped in coal tar, the commonest material will be rendered nearly equal to the best cedar.

Many persons like to save their own seed of some crops; espscially of Peas, Beans and such like. But they have a fashion of leaving them on the poles, until they are dried by frost, before they gather them. In this way immature ones, appearing like those which fully mature, are, are all gathered in together,—and much of the rotting of seed which we sometime experence comes from these immature frost dried seeds.

As soon as Beans and Peas are ripe the sticks and poles should be taken out and stored away and not suffered to stand all winter.

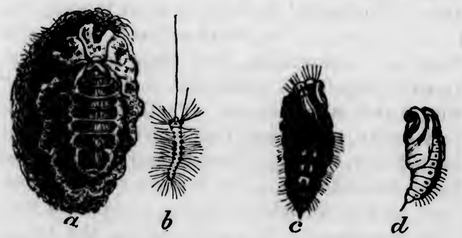
COMMUNICATIONS.

THE REPLACEMENT OF INJURIOUS INSECTS BY HUMAN AGENCY.

BY DR. JOHN L. LE CONTE,
President of the American Association for the Advancement of Science.

The following notes read by Dr. John L. Le Conte, of this city, before the American Association for the Advancement of Science, at Hartford, recently, will have an interest to many who care little for the more unusual topics selected by the other eminent naturalists who presented papers. They contain some important suggestions to city housekeepers.

For many years the shade trees in the streets of some of our large cities (notably New York and Philadelphia), were almost annually defoliated by the ravages of the larvæ of Ennomos subsignaria (Hubner). The larvæ of this Geometride have a repulsive appearance, being of a brown color, with a red head, and have no doubt been the cause of many impatient exclamations on the part of my hearers. The passer-by was never secure from their annoying presence, for they had an ingenious way of trying extemporaneous pendulum experiments; letting themselves down by a silken filament, and them climbing up again by gathering in the line. When matured they descended finally to the ground by a filament, and, spinning a cocoon, underwent their transformation between the crevices of the



bricks, about the roots of the trees, or even beneath a loose covering of earth. In the middle of June the white moths were seen flying about in vast numbers during the evening, and any leaves which had escaped the first set of larvæ were soon devoured by the following brood. This nuisance continued for many years; various ingenious and empirical plans for removing it were suggested in the newspapers and practiced industriously by simple minded people, ignorant of the habits of the insect, and naturally without success. At last the town sparrows were introduced from Europe, and within a few years have exterminated the annoying Geometride. But mark the result. No sooner had the trees, by the protection of the birds, regained the power

of leafing out in the spring without molestation, than another moth of the family Orgyia leucostigma (S. & A.) commenced to appear in moderate numbers where it had previously been rather uncommon. It has now in Philadelphia become nearly as destructive as the Ennomos formerly had been, though not otherwise so annoying. The larvæ of this Noctulde is a slender caterpillar, covered with stiff, yellow and black hair, with tufts of much longer hair. The sparrows will not eat it, being probably deterred by the stiff hairs with which it is protected, and perhaps by some disagreeable odor. Several correspondents of our daily papers, forgetful of the services rendered by the colonized sparrows, have abused the birds for want of attention to their duties, and, ingeniously attributing their neglect in attacking the new depredators to a surplus of more delicate provender, have endea-

vored to discourage the human habit of putting out crumbs and seeds for the birds when natural food fails them. Now, the fact is, the birds do not eat these hairy caterpillars, because they cannot. The new pest, the Orgyia, differs greatly from the Ennomos in its transformations and habits. The larva does not perform ærial

gymnastics, suspended by a thread, but, having attained its full growth on the tree, crawls quietly to the neighboring wall or fence, and, fixing its cocoon in full view, changes to a chrysalis, when the perfect insects emerge. The wings of the male grow rapidly, while those of the female remain abortive, and her eggs are deposited upon the cocoon. Mr. Riley informs me that in orchards and forests the cocoons are made on the trees, which is quite natural, as there are no surrounding objects capable of giving shelter: they are also occasionally seen to descend by threads, though I have never seen them do so in the city. The remedy against the Orgyia is therefore very simple. Direct the servants, with stiff brushes, to sweep the cocoons from the walls and fences, and lest any should escape destruction by the negligence of your own or your neighbor's household, place around the trees to be protected rings of tin plate, inclined at an angle, or girdles of coal-tar, or any other material offensive to insects, to prevent the larvæ from climbing on to the tree. Thus we see, in this instance, that when an injurious insect, which can resist human control, has been exterminated by introducing one of its natural enemies, it has been replaced by another, which can resist the introduced enemy, but is, on the other hand, easily kept in abeyance by a small amount of care, and especially industry. In entomology, as in all other practical applications of knowledge, science and industry must go hand in hand to produce the result desired—a lesson that cannot be repeated too often to those interested in the protection of agriculture against insect depredations.

[Regarding this paper read before the American Association, recently, at Hartford, as one of the most valuable contributions to practical tree culture that has come before us for some time—especially to those who dwell in cities,—we have had engravings of the insects made by Prof. Riley to accompany the article, and have had the text carefully revised for the *Gardener's Monthly* by Dr. Le Conte himself.—Ed. G. M.]

BASKET PLANTS.

BY W. F.

Hoyas.—I have a partiality for Hoyas above all other flowering stove plants, and I am glad to be able to class H. Bella and Paxtoni amongst the chief gems for basket work. In habit and flower these two species are remarkably alike, but Paxtoni has more shapely acuminate leaves, and a more fragile character of growth than Bella. Both are free flowerers, the blooms being borne in umbels are waxy, and of a pure white color, centered with reddish-pink. When the flowers fade and drop, the footstalks of Hoyas and Centrostemmas should not be cut away, as they produce another crop of flowers if left untouched. Hoyas should first be grown into handsome little specimens in pots before transferring them to the baskets. They are increased by means of cuttings, but the two kinds are rather slow-growing compared to the climbing sorts like carnosa and Imperialis.

Isolepis gracilis.—This is an enticing little grass-like cyperaceous plant, with multitudinous "leaves," each of which is tipped with a small cleft inflorescence. Some of its "leaves" stand erect, whilst others gracefully diverge over the edge of the pot, vase, or bracket, in which it is grown. It looks well as a single specimen, or small plants of it may be effectively used to surround some tall central plant of another genus. It is properly a greenhouse plant, but thrives almost anywhere if kept moist and free from frost, and is an excellent window plant. It may be propagated to a great extent by division, but I would not advise the crowns to be separated into very small tufts, as very little pieces take several months to make useful ornaments, no matter how kindly they are treated.

Ivies.—These are excellent basket plants, and can be grown erect or drooping, or trained around the base of the baskets, so as to completely hide them. For window-boxes and vases they are invaluable, and their glossy evergreen foliage is as fresh and cheering in midwinter as it is in summer. Their constitution is very hardy, and when they start to grow they grow freely. Wills, Wimsett, and other London floral decorators, use Ivy screens to a great extent, to hide unsightly objects, or break a view in an apartment. For this purpose the Ivy is grown in narrow boxes six inches deep, and any length, and trained upwards in the form of a wall some three or more feet high. Some of the Ivies have broad leaves, others very narrow ones, and others diverge into all shapes. We have also shining green coriaceous leaves, and others beautifully blotched with yellow or white. A few of the best are Caenwoodiana, Maculata, Albo lutescens, Canariensis, Argentea rubra, Gold Blotched Himalaica Rhomboidea obovata, Digitata, and the Irish Ivy, which is perhaps the most serviceable of any.

Linaria cymbalaria variegata.—This excellent basket plant is commonly known as the variegated Coliseum Ivy, and is one of our best window-plants. It flourishes under very adverse circumstances as regards position and drought, but blooms most abundantly when grown in a sunny situation, and in a cool and airy place. I have seen it thrive amazingly growing on old walls. Cuttings of it root very quickly.

Lysimachia nummularia.—This hardy little plant is known as Moneywort, Herb Twopence, and in the London market as Creeping Jenny. It is a fine subject for drooping over the sides of a pot, basket, or vase, and as it never grows upwards, something tall should be used as a centre. It loves moisture, and grows well in the shade, but in comparatively sunny positions it blooms the freest. Its flowers are large, bright yellow, and produced in great abundance; whilst under favorable circumstances its stems depend some 2 feet. The window, open air, or greenhouse, suits it best. At Bath, England, I saw nice specimens of this plant in a small cottage-garden. The owner had small India rubber plants in pots, and these he plunged in other pots filled with rich soil—chiefly cow-manure well seasoned—and therein planted his Creeping Jenny. The pots were then fixed outside the window in brackets, and the trailer hung like a green or golden mantle for two feet downwards, whilst the glossy and fresh leaves of the ficus had a telling effect. At Beaufoy's gardens, Lambeth, London, I saw the finest drapery of this little plant that I ever beheld, hanging over the sides of outdoor garden vases partially shaded with trees. Lambeth being in one of the chief manufacturing and most smoky districts of London, is sufficient testimony of the value of the Creeping Jenny for similar smoky neighborhoods in this country. I consider this plant an excellent cottager's friend, as the stems die down in winter, and then the plants may be stored in cellars, if dry, till spring, when, if brought to light, and some moisture be given them, they soon start afresh. When they just begin to grow is the right time to pot them. Propagate by division and cuttings.

There is a purely yellow-leaved variety of the same, that retains its color well, and grows freely, but not so strongly as the original kind. It also is suitable for basket work, but is most frequently met with as a flower-bed edging.

Marcgravia dubia.—This is a good basket plant for a damp stove. Its leaves are fleshy and thickly produced on a creeping or rather epiphytal stem, that attaches itself to wood or stone with great tenacity like Ivy. For covering the sides of wooden baskets or vases, it may be used with good effect, but for wire baskets I consider it useless. It should not fill the central bowl, as it does not grow upward. Propagate by cuttings.

Mimulus moschatus.—This is the Musk plant of our gardens, and an easily grown and applicable subject for conservatory or window baskets, pots, or boxes. It is indigenous to the Columbia River district, North America. At the Provincial Show of the Royal Horticultural Society, London, England, held at Bath, there was much discussion amongst the judges as to whether the Musk plant or the Ivy-leaved Pelargonium should have the precedence as being the best English window-plant, but judgment was given for the Pelargonium. The Musk likes a very rich soil and plenty of root-moisture, and is often found in excellent condition depending all round the pots or baskets uncared for, or trained within a little fence of upright stakes and string. When grown within a house or greenhouse, its perfume is stronger than when grown out of doors. Propagate by means of stem or root cuttings, division, or seed. When the plants die down in the fall, store them away when dry in the cellar till spring, when they should be brought to light and started again.

HORTICULTURAL NOTES FROM LOUISVILLE, KENTUCKY.

BY JAMES JOHNSON.

When I left Philadelphia I promised to write to several gardeners, giving my opinion of the prospects for gardeners. I wrote to some of them from Pittsburgh and Cincinnati; but as they all read the *Monthly*, I thought it would answer the purpose to write to you, as there might be others who would like to know.

There are some good private places at Pittsburgh and Cincinnati; and any one with a capital of from two to five thousand dollars, could do well; but I think it would not be safe to try with much less. But I have not seen a place where a gardener with a small capital could do better—that is from six hundred to two thousand dollars—than Louisville; but he must combine

jobbing-gardening with the florist business. I give you the reasons. Louisville covers more ground than any city that I am acquainted with, in proportion to the number of inhabitants. They have large front yards; and there is great demand for bedding plants in May and June. There is hardly any demand for cut flowers until winter, as nearly all of them grow their own, so that the large firms are not doing much, while the small ones are doing well—that is the ones that do all the work themselves, and attend yards and cemetery lots in summer. I heard of one German who said he made three thousand dollars this year.

He has five greenhouses, himself, wife, and one boy doing all the work; while a large estabtablishment that used to clear five thousand dollars a year, is now hardly paying expenses,—wages eating up the profits.

I would not advise a gardener to come to Louisville, looking for a private place. There is not such a thing as head gardener known; they are head and foot, and every thing here. You can see a first-class gardener pushing the mowing machine in the front yard of a gentleman said to be worth two millions (he died lately). Nearly all of them want a gardener to grow for market, to help pay expenses.

In your June number you mention a colored florist. Louisville can boast of one, and a successful one at that. He combines jobbing with the florist business. He has two greenhouses, and buys an immense lot from the other florists besides; and the wonder is he has but one hand, and a hook for the other. I think his name is Gibson.

If these few notes are worth publishing, I will write a few more from Nashville.

[Notes like these, in relation to the condition of gardening in various parts of the country, are very interesting, and are always welcome. We have, however, to remember that the writers tell according to their best knowledge and belief. There are several excellent private gardens in the vicinity of, if not exactly in Louisville, where the position of a private gardener is as highly honored as anywhere in the Union. At the same time these are so few, that for all practical purposes, such as our correspondent has in view, his remarks are very just, and will bear considering well by those for whom they are intended. —Ed. G. M.]

PREPARATION FOR A GOOD LAWN.

BY J. C., CHELSEA, MASS.

As you are aware, the first great requisite is to have good drainage, after which prepare the ground by deep plowing, and also by subsoiling, the soil requiring to be well pulverized and enriched to expect any success in our hot climate.

A good lawn is one of the most pleasant appendages to a gentleman's house, but to make it so, it requires to be well attended to, both in the formation, and also by keeping it mowed every two weeks at furthest, using the most approved lawn-mower. By doing so you will soon have a lawn like a carpet. Inexperience and neglect has been the cause of numerous failures.

If acceptable, I may have something to say on planting and kindred subjects hereafter.

OUR NURSERIES.

BY GEORGE CORBETT, COLLEGE HILL, CINCINNATI.

Under the above heading there appears, in the September number, some remarks by "an observer," in which he claims a great reputation for our nurserymen as originators or introducers of new plants of a higher order. I freely admit that new plants have been raised worthy of a place, but these are very few. Little or no interest is taken in hybridizing, and the origination of anything novel, is in most cases merely incidental. The leisure time of our nurserymen seems to be insufficient for such work, or, if I am wrong in this supposition, it must be attributed to their lack of patience and energy, which is so indispensable. I need hardly suggest that our greatest gems are most invariably importations from European nurserymen, many of whom I could mention have a would wide fame for the many novelties introduced to the public by their untiring patience in the process of hybridizing.

Observer further claims that many of our nurserymen have shown enterprise of a higher order in the cultivation of a more rare class of plants, and in this I quite agree with him. Recently, when visiting the Cincinnati Exposition, I found the display of stove and greenhouse plants, of recent introduction, far exceeded my expectations. Small, but well grown plants of the choice varieties of Caladiums, Palms, Crotons, Dracænas and Alocasias, many being those collected by the late John G. Veitch, of London, to whom we are indebted for many of our finest plants of the present day. That the supply of the higher class of plants is equal to the demand, there can be no doubt. My experience in the commercial trade has taught me that purchasers of plants of a higher order are comparatively few, being those only of wealth, refinement and taste. Having recently an opportunity of judging of the interest manifested in these choice exotic plants, by a multitude of people, it soon became evident that the choice Fern, Croton and Caladium, were not appreciated as they so much deserve; their admiration was for the more common Geranium, predominating to a vast extent. However, it is but justice to admit, that the demand for soft wooded plants of the common class is equal, if not surpassing, the demand of any other country. As a rule, many plants do not thrive long in our dwelling houses; the influence of a dry atmosphere has a deadly effect on them, and the result is their days are few.

The supply of this class of plants certainly is very creditable, and show energy and skill on the part of our commercial florists. The display in the sale season is the chief object of attraction in our large cities, and the competition so great that prices are reduced to a minimum, and plants within the reach of all.

[The articles we are receiving on this subject show how great is the zeal and desire for an improved feeling for horticulture; and, however much any one of our correspondents may differ from another, it will be perceived that the same creditable desire actuates them all. It is well to feel, perhaps, that we are much behind other countries in higher horticulture, because that very feeling will induce us to try and catch up; at the same time it is well to consider our different circumstances. Very few, comparatively, of our people have the *leisure* to enjoy which so many Europeans have. Most of our people live by the sweat of their own brows, instead of fattening on the industry of others, and leisure of some sort is essential to the enjoyment of gardening. We are inclined to believe that if we take this element into consideration, our people are not a whit behind any others in their love of gardening. The freedom with which any amount of money from taxation is voted by the people for public parks and gardens, in all our large cities, is an evidence of the general love for it. What they cannot do individually, they are willing to do collectively.

Besides all this, there is quite as much of fashion in much European gardening; and we question whether European gardening would be near as popular there as it seems to be, had it not received the patronage of royalty. All the leading societies are "Royal Horticultural" societies, and if "Queen Victoria," "Beatrice," or "Louisa," can be attached to a new article, it is sure to go.

We make these suggestions to our correspondents, not to head off anything they may wish to say in courtesy and kindness, but merely to show how many sided is the subject. We may see that American gardening, if it have some defects, is also entitled to no small degree o credit.—Ed. G. M.]

WHY WE LACK GARDENERS.

BY T. W. P.

In the September number of the *Gardener's Monthly* an *Observer* breaking a lance with me in honor of *Our Nurseries*, exhibits a laudable interest, even pride, in the Matadores of our *Trade*. Rather than meet him *cap a pied*, I would shake hands with him, for his clever remarks, somewhat marred by an awkward compositor, and find their cause in a total misunderstanding of my article, in which I said: "Our nurseries (not our manners)—with exceptions few and far between, &c." Will Observer acknowledge his mistake, when I assure him that, thinking at the time of just those firms he enumerates, and a few more, made me admit the exceptions, and because their number could not easily be stretched beyond that of a baker's dozen, I called them ew.

The censure, however regretfully expressed in the article "*Why we lack gardeners*," was evidently directed against some of our fellow citizens, who have been favored with success in the noble art of making money, or by the not always ennobling good fortune of finding it ready made by some *much lamented* relation. Not against those enterprising men, who strain their brain and muscle, and not unfrequently their credit, to the utmost, in order to gain in addition to a fair compensation in money, that higher and nobler satisfaction of being counted amongst the true promoters of horticulture. That they are not more encouraged in their efforts and that their number is so small, certainly does not speak well of our so-called higher classes; nor is it at all flattering to our Horticultural Societies, the results of whose activity might be a little more noticeable than they are.

That I live, as Observer suspects me to do, in quite a remote corner of Uncle Sam's domain, is unfortunately too true, and just the reason why I ventured occasionally abroad trying to find a so-called "gentleman's" place, worth the *hire of a hack* (and not as Observer has it, the hide of a buck,) to see it or the collection of plants thereon. In some of them, neglected remnants of once valuable and interesting collections may be seen, but in most cases bedding "*stuff*" and flowers for bouquets, seem to be the all absorbing objects of the gardener. There are instances where from ten to forty thousand bedding plants, the bulk invariably consisting of Coleus, Centaureas and Scarlet Geranium, for *ribbon planting* are, as they say—*needed!*—The planting of these modern flower-beds, or rather leaf-beds, however, does not require any more skill and taste, than is exhibited in a rag quilt, and the keeping of the grass short, as is often done to an excess; no more talent than is necessary to shear the head of a convict. No gardener therefore has occasion to point to these two features with pride, though *the ladies may admire them ever so much.*

When noticing the almost invariably too large kitchen-garden, with its irrational arrangement, we asked, whether *they* kept a boarding house or supplied charitable institutions, we were emphatically answered in the negative, but told that two thirds of the things went to waste, if not—mirabile dictu—to the market, to help defray expenses! That under such, only too widely prevailing circumstances with scanty help, little is left for æsthetics is natural, but deplorable and certainly not fostering Horticulture of a higher order.

[We take occasion to suggest to our good cotemporaries who often quote from our pages, the propriety of crediting "*Correspondent of Gardener's Monthly*" instead of simply "*Gardener's Monthly,*" when the papers are from our contributors columns. One of the papers in relation to the present question, containing expressions with which we by no means agree, has been referred to recently in an English magazine, as the "Opinions of the *Gardener's Monthly.*" It is our wish to open our columns freely to good tempered discussions, but not to be answerable for the opinions expressed.—ED. G. M.]

NOTES FROM AN OLD CONTRIBUTOR.

BY T. S. REID, NEW FLORENCE, PA.

I notice occasionally in the *Gardener's Monthly*, that you request information respecting any *new plant* worthy of cultivation. I presume old fruits, which have never found their way into the hands of any out of the immediate neighborhood of their origin, and yet surpassing nearly, if not all, others, will be as acceptable as seedlings of recent birth.

I will endeavor to send you specimens of four distinct varieties of winter apples, which, in my opinion, in some respects, surpass all other winter apples cultivated in any part of the Union. They may not succeed in other localities as they do here in their native soil and climate. One of these I described in last February's number of the *Gardener's Monthly*, under the name of "*Menocher's No-Core,*" a very large well-flavored apple, and a good keeper, without either seeds or core. Second, Menocher's best winter, of medium size, quite handsome, and well flavored. Third, the largest and best flavored winter apple I have ever seen—much resembling the "*Fallawater,*" (so much so that some fruit men pronounce it identical) but much firmer, larger, and greatly excelling in flavor when fully ripe, ripening in March and April.

This apple originated in my father's orchard, on the north bank of the Conemaugh River, in this immediate neighborhood. The original tree was in bearing over sixty years ago, to my certain knowledge as an eye witness.

I originated the "*Ohio Cultivator*" and "*Belmont Gardener*" in 1837, then the only agricultural or horticultural paper published in any State of the Union west of the Alleghany Mountains. The first agricultural society ever organized west of Pennsylvania that I had any knowledge of then, or have yet heard of, was the Belmont County Agricultural Society, of which Hon. Benjamin Ruggles, ex-United States Senator; Hon. Benjamin Cowan, afterward Congressman; Hon. Benjamin Wright, Hon. James Alexander, Congressman elect; Dr. Kirker and Col. Nicewanger, were managers. Hon. Benjamin Ruggles, President. Col. Nicewanger, Secretary. T. S. Reid, Cor. Secretary.

I availed myself of every means to make the "*Ohio Cultivator*" and "*Belmont Gardener*" as useful as possible, and had the united efforts of many of the best horticulturists then in the Union, in bringing into notice the best fruits then extant. If I remember correctly, the yellow Bellefleur, the Pennock, and Black Gilliflower, were considered the best winter apples then known in Ohio. But I must say these varieties did much better in Southern Ohio than I have yet known them to do in any part of Pennsylvania.

I sold out in Ohio, and returned to Pennsylvania in 1839; and finding this tree of which I have last been speaking in full vigor, and its fruit altogether surpassing everything in the fall catalogues of all fine apples then known, I grafted a number of seedling orchards in Ligonier Valley, and after those grafts began to bear, grafts were taken from them, and hundreds of trees in the Valley are this season hanging full of these beautiful and delicious apples.

Fourth is a solitary tree about seventy-seven years old, in Mr. G. S. Nabon's orchard, planted by his grandfather about 1797. It is said by old persons, that this tree bore very large apples while young. It yet bears apples of a very respectable size. Last April I saw a number of nice sound apples without a rotten speck or a mark of frost, which had been ploughed down the fall before, and had lain in that condition during the many changes of freezing and thawing. Some of the same I kept till in July, and Mrs. Nabon (since deceased), told me she had often kept the apples of that tree till the 4th of July, which were then as sound and solid as they were when taken off the tree, and said she "*did not know how long they might have been kept, if she had only had enough of them.*"

RANDOM RECOLLECTIONS, AND RECORDS OF RHODODENDRONS, &c.

BY MR. W. T. HARDING, COLUMBUS, OHIO.

[*Concluded from page* 305.]

The pride of the old gentleman, Mr. Boothroyde, and a finer specimen of one I never knew, (I don't mean one of the "guinea stamp,") was to point exultingly to an immense Rhododendron pontica, and exclaim, "This is the biggest bush in England." This magnificent shrub, at the time of which I write, measured 60 feet in diameter, and was 14 feet high. Its contour was faultless; and when in its full floriferous glory, might aptly be compared to a "huge convex of fire." I have frequently seen and read of other noble specimens of Rhododendrons, but never saw one to excel the mountain-like bush at Kirklees.

Of the many varieties now in cultivation in Great Britain, their name is legion. The climate favors their growth and full development. There, they may be seen as common in the yards and gardens, as is here the Norway Spruce and Arborvitæ. Who ever has had the good fortune to see a Rhododendron exhibition in England, will retain a vivid recollection of the many peerless beauties so well selected, and admirably arranged for inspection. Such a grand commingling of colors, and blending of masses of brilliant floral treasures, are truly superb. Without exaggeration, they may fitly be compared to the magnificent cloud-mountains often seen in the western sky when the glorious sun sheds a parting glow on the declining day, and gorgeously gilds the curtains of night. Happily, it is no longer necessary to cross the Atlantic to see good Rhododendrons flourishing either in the shrubberies or gracing the exhibition tents. The sight may be seen in New England as well as in Old England. Before long it is to be hoped they will be more frequently seen in all sections of the country. Æsthetical Boston, ever ready to acknowledge and appreciate whatever is beautiful or ennobling, had the honor of first presenting to the public a view of the tented Elysium, where lovely Rose Bays, resplendent with floral beauty, transformed a terrestrial to a celestial scene. After such a demonstration, who can doubt the feasibility of planting and successfully growing them?

Mr. Parsons, of Flushing, and other "progressive spirits of the garden" around Philadelphia and Boston, have long ago solved the Rhododendron problem. Within their extensive grounds may be seen acres of healthy, vigorous and handsome plants, specially prepared for grouping, massing, or planting as single specimens. As objective evergreens on a lawn, they stand unrivalled. My object in writing is to encourage their cultivation, and thus urge all to plant who can. The question will naturally arise with the reader, can I grow them in my ground without incurring a heavy expense in purchasing and preparing a proper and suitable soil for them? to which query I unhesitatingly reply in the affirmative, with this proviso, if the plants have been previously transplanted, twice at least, and thoroughly exposed to wind and weather, and grown in the bright sunshine during several hours of the day, they will undoubtedly succeed. Because in a wild state they are mostly found as under shrubs, growing beneath trees of larger growth, and revelling in leaf-mould, or soil of a similar nature, is no proof that they will not flourish in other soils or situations. Thousands of well attested facts are proof to the contrary. They are not partial to limestone soils, neither do they delight in wet or

clayey ones, or banks, high, dry and shallow. To remedy any of the above conditions is a very simple matter. Almost any good garden soil will grow them, if it will produce mealy potatoes. The top spit of fresh, yellow loam, dug from an old pasture, will suit them nicely. It is advisable to mulch them with some suitable material. Half decayed leaves (oak or beech are best), gathered in the woods, and with a little well-rotted cow-dung, pulverized and scattered among them, makes an excellent mulch during the hot summer months. Should the growing season be hot and dry, water them copiously a few times, and they will thrive all the better, and will ripen the young shoots before frost sets in, and so be more able to endure the chilling blasts of old "Boreas," as he pipes his unmusical notes to the frigid tune of zero. If the season should prove a wet one, so as to induce too succulent a growth, remove the mulching until late in the fall, and then give an extra covering to exclude the frost. Perhaps a little more care might properly be given them; and as I am writing for amateurs, it would also be a labor of love and charity to make them snug and comfortable when wintry winds are blowing. A cheap and sufficient protection may be made as follows: Drive in a few stakes around the beds, and among the shrubs, to which tie a few bast mats, so as to shelter them from the cutting winds, and screen them from the bright sunshine, which usually follows a frosty night. The sudden transition from cold to heat is the cause of more injury to vegetation than is generally supposed.

Masses or clumps of Rhododendrons may be planted or mixed with Kalmias, and margined with Ghent, or native Azaleas. They group well together, and are also effective when occupying separate beds or borders. When out of bloom they may be made very attractive by setting a few Gladiolus bulbs among them. Three or four planted in the spaces between them, and neatly tied up to stakes, adds another charm to them, with their brilliant and beautiful flowers.

Through the urbanity and kindness of Mr. E. W. Buswell, the gentlemanly Treasurer and most efficient Corresponding Secretary of the Massachusetts Horticultural Society of Boston, than whom, no man is better fitted for the position, I was favored with a copy of the Society's transactions for the year 1874. Therein is given a list of eighteen hardy Rhododendrons, and which, for the benefit of those less favored, I quote as follows:

RHODODENDRONS.

coriaceum,	atrosanguineum,
delicatissimum,	Lee's purple,
album elegans,	gloriosum,
album grandiflorum,	grandiflorum,
roseum elegans,	giganteum,
Hannibal,	cœlestinum,
purpureum elegans,	Bicolor,
" grandiflorum,	Mrs. John Clutton,
Everestianum,	macranthum.

To which I add twelve more.

Betsey Trotwood,	Imperatrice Eugenie,
Paxtonii,	Soliel d'Austerlitz,
John Waterer,	Duc de Nassau,
Aurora,	maximum,
Stella,	catawbiense,
Lowii,	ponticum.

Thirty for the Conservatory.

arboreum,	Dalhousiœ latifolia,
" roseum,	gandivensis,
Bagshot Rival,	virgatum,
Rosa Mundi,	maculatum,
Edgeworthii,	calophyllum,
Rollinsonii,	Reine Amelia,
eximium,	Roylei,
odoratum,	Veitchianum,
Thompsonii,	jasminiflorum,
Fleur de Marie,	Faulknerii,
ponticum, fol. var.,	pelargoniæflorum,
argenteum,	Wightii,
consessum,	Boothii,
longifolium,	javanicum,
Lady Cathcart,	tubiflorum.

TWELVE KALMIAS.

latifolia,	variegatum,
rubra,	rosmarinifolia,
angustifolia,	nana,
glauca,	rosea,
pumila,	rosea miniata,
hirsuta,	cuneata.

THIRTY HARDY AZALEAS.

calendulacea,	nudiflora semi-duplex,
" Triumphans,	" mirabilis,
" flamula,	viscosa,
" grandiflora,	" crispa,
" chrysoelata,	" odorata,
nudiflora,	" rubescens,
" blanda,	speciosa,
" alba pleno,	" crispa,
" crispa,	" major,
" discolor,	" tortulifolia,
" carnea,	" aurantica,
" papilionacea,	" pontica,
" magnifica,	" amœna,

nudiflora, violacea,	amœna splendens,
" rubicunda,	" roseum

THIRTY GHENT AZALEAS.

Exquisita,	Imperatrix,
Roy de Belges,	Estella,
Ornata,	elegantissima,
Bouquet de Flora,	quadricolor,
Jenny Lind,	Rembrandt,
Unique,	gloriosa,
Amabilis,	floribunda odorata,
Amelia,	Aurora rosea,
elegans,	Charlemagne,
versicolor nova,	Glorie de Belgeque,
atrorubens nova,	speciosissimum,
magnificens,	proserpine,
alba marginata,	nobilis,
Regina,	Reine de Angleterre
Rubens,	Leopold.

THIRTY INDIAN AZALEAS FOR GREENHOUSE.

alba illustrata,	Queen of Beauties,
King of Spots,	Stella,
Adelaide de Nassau,	vittata rosea,
Bouquet de Roses,	Tr'mph de l' Expsition,
Flag of Truce,	Vivid,
Dr. Livingstone,	Standard of Perfection,
Glory of Sunning Hill.	Comet,
Theresa,	La Brilliant,
Lord Derby,	Bernard Andre,
Giant of the Battles.	Queen Victoria,
King hornii,	Frances de Vos,
Waxwork,	Eulale Van Geert,
Stanleyana,	Riene de Belges,
Gladstania,	Mars,
William Bull,	Criterion.

The above list is a good one to select from, and is not too expensive; to which many more might be added, but will suffice for a beginning, and which, I hope, every body will plant who can, and enjoy them in the good time coming.

POMOLOGICAL INSTITUTE AT REUTLINGEN, NEAR STUTGARDT, WURTEMBOURG.

BY A. M. C. JONGKINDT CONINCK, DEDEMSVAART, NEAR ZWOLLE, NETHERLANDS.

This establishment, under the able superintendence of Dr. Edward Lucas, undoubtedly takes a prominent position among horticultural schools on the Continent. Having been a year at the above Institute, I will try to give a short description of the same. It was founded by the above gentleman in 1860, and now extends over twenty-one acres of land. Since its commencement 696 pupils from various countries have been received. During the winter of 1872, and the summer of 1873, there were seventy-one scholars from the following States: Baden, 3; Bavaria, 1; Palatinate, 6; Hessia, 1; Pomerania, 2; Brandenburgh, 6; Silesia, 3; Province of Saxony, 3; Westphalia, 1; Rhine province, 1; Hanover, 1; Holstein, 1; Hessia-Nassau, 3; Reuss, 2; Saxony, 4; Wurtembourg, 7; Moravia, 2; Tyrol, 1; Transylvania, 1; Switzerland, 6; Denmark, 1; Sweden, 2; America, 2; Africa, 1.

As indicated by the title of the Institution, pomology is one of the leading features; but instruction in every branch relating to horticulture is given, chiefly by Dr. Lucas, his son, son-in-law, and foreman. Vine culture, drawing, physics and chemistry, are taught by competent professors. The arrangement of the garden is also very good. A main walk, 110 yards in length, is planted on each side with a great variety of fruit trees in the form of cordons, palmets, &c., and on the right and left of this walk are the model gardens, where the best sorts of fruits are to be found as great pyramids. Further on is the real nursery, where every year large numbers of fruit trees are trained.

Not only is the theoretical instruction at Reutlingen excellent, but also for the practical part it would be difficult to find a better establishment. From the large number of fruit trees grown, every one has the opportunity to practically perfect himself in fruit culture. There is also a splendid geological collection, tools of different countries, an excellent library, artificial fruits, etc.

The flora of Reutlingen and environs is a very rich one, as the town is situated amongst high mountains. The botanical excursions, which are often made, either with Dr. Lucas or his foreman, are exceedingly interesting, and an excellent herbarium can be formed by those who are desirous of doing so.

Not only from a horticultural point of view a stay at Reutlingen is recommended, but from the great number of scholars there are from different countries, the best opportunity is afforded for learning other languages. It is a great pity such institutes are so rare.

TRADITIONAL TREES OF AMERICA.

BY ETHEL ALLEN.

Foremost, among the traditional trees of America, stands the Charter Oak. The incident

that gave to this tree its title, is one with which every schoolboy is familiar, and yet it is of such an interesting character, that perhaps I may be pardoned for here repeating it.

Hartford, Connecticut, claims the Charter Oak, which famous tree till recently stood in such a vigorous state that it seemed as if it might flourish for another century. Its trunk measured twenty-one feet in circumference, and nearly seven in diameter. The following is the story in which it bore so prominent a part:

In December of the year 1686, Sir Edmund Andross, governor-general of New England, wrote to the colony of Connecticut to resign their charter; but without success, however. The Assembly met as usual, the next October, and the government continued according to the charter, until the last of the month, when Sir Edmund with his suite and more than sixty regular troops, suddenly entered Hartford, where the Assembly was then sitting, and demanding the charter, declared the government under it to be dissolved.

But the spirit of New England asserted itself, and Yankee ingenuity found a way out of the difficulty.

The important affair was debated until evening, when the charter was brought and laid on the table before the Assembly. Suddenly the lights were extinguished, and under cover of the darkness, one Captain Wadsworth, of Hartford, carried off the charter and secreted it in a large hollow oak that stood in front of the house of one of the magistrates of the colony. The candles were relighted, the people all appeared peaceable and orderly, but the charter was gone and safe beyond discovery.

The cavity in the old oak tree which held the charter, was near the roots, and wonderful to relate, closed of its own accord within the next eight years.

Four years previous to the event just narrated, towards the close of November, 1682, William Penn made his memorable treaty with the Indians under the celebrated Elm-tree that stood at Kensington, Philadelphia.

The fame of the "Great Treaty," as it is called, has extended over the civilized world. Voltaire spoke of it as the only treaty between the Indians and Christians, that was never sworn to, and never broken.

Heckewelder, in his "History of the Indian Nations," after speaking of the aversion of the Indians to hold treaties elsewhere than in the open air, thus proceeds:

"William Penn, said they, when he treated with them, adopted the ancient mode of their ancestors, and convened them under a grove of shady trees, where the little birds on the boughs were warbling their sweet notes. In commemoration of these conferences, which are always to the Indians a subject of pleasing remembrance, they frequently assembled together in the woods, in some shady spot, as nearly as possible similar to those where they used to meet their brother *Miquon*, (Penn) and there lay all his words or speeches, with those of his descendants, on a blanket, or clean piece of bark, and with great satisfaction go over the whole."

The treaty tree was long preserved in the affections of the Indians and colonists. During the revolution, while the British occupied Philadelphia, and their parties were scouring the country for firewood, General Simcoe had a sentinal placed under the old Elm to protect it. The Methodists and Baptists often held their summer meetings beneath its shade. It was blown down in 1810, when it was ascertained to be 283 years old, having been 155 years old at the time of the treaty. The Penn Society have erected a monument on the spot where stood the famous tree.

An incident in the life of John Harris, whose son founded Harrisburg, has excited considerable interest. On one occasion a band of Indians came to his house, and asked for rum, which he refused to give them, seeing that they were already intoxicated. Becoming enraged, they seized and tied him to a mulberry tree, with the intention of burning him. Before they could execute their horrible purpose, however, he was released, after a struggle, by some other Indians of the neighborhood. In remembrance of this event, he directed that on his death he should be buried under the mulberry tree that had been the scene of this adventure. He died in 1748, and his remains still repose under the shade of his memorable tree.

Near the falls Sault St. Marie, at the outlet of Lake Superior, formerly stood a large mountain ash, from which, says Indian tradition, there issued one calm, cloudless day, a sound resembling that produced by their own war-drums. From that time the Indians regarded this tree as the local residence of a spirit, and deposited at its foot offerings of small green twigs and boughs. At length the tree was blown down during a severe storm, but the spot where it had stood was still considered sacred and the offerings continued. In July, 1822, the government sent a military force to take post at the foot of the falls, and one of the first acts of the commanding officer was to order a wagon road cut from the falls to the hill which the French called *La Butte des Terras*. This road being cut sixty feet wide, passed over the site of the ash tree, and the offerings were innocently enough removed by the workmen. Thus the practice came to an end, as the Indians said the tread of the white man had desecrated the ground.

A strange tradition is connected with Alexander's Lake, Connecticut. In ancient times, when the Indians inhabited that region, and were enjoying great prosperity, the different tribes decided upon a certain time for a general pow-wow or festival, which was to take place on a high mountain covered with tall pine trees. But the great Spirit looked with disapproval upon these outbreaks, and accordingly determined to punish them for their wicked behavior. All at once, the mountain gave way, and they sank together, while the water rushed up and covered them. Only one good old squaw was saved. Tradition says, that on a clear bright day, when the Lake is smooth, tall pines may be seen in the depths of the water, their branches reaching nearly to the surface, and exhibiting peculiar and fantastic forms.

[The pleasant sketch of some "Traditional trees," by "Joan," in our July number, was so well received by our readers, and so generally appreciated by others, as its frequent appearance in our exchanges attests, that the lady has been encouraged to write another sketch for us. The same title is preserved; though it is difficult to decide sometimes where history begins or tradition ends. It is our custom to withhold the full names of contributors, or to give the articles under "odd" names when desired and requested, but as the full name is attatched to this contribution we trust we are not "letting the cat out of the bag" by publishing it as received.–Ed. G. M.]

EDITORIAL.

TRAVELING RECOLLECTIONS.

Among the interesting features of Maryland, horticulturally considered, is the number of fine gardens which have remained in one family for many generations. In other places, where property continually changes, the plantings of one day are neglected the next; and grand old trees valued by the one for their historical associations, or for their intrinsic beauty or rarity; by the other are regarded only so far as the amount of cord wood they contain. One of these grand old gardens is that of Hampton, for several generations the home of the Ridgeleys. This is probably ten miles from Baltimore; but in company with Messrs. Brackenridge, Sands and Pentland, and through a country of the most beautiful character,—now driving through deep shaded lanes, under huge white and Spanish Oaks, or along streams bordered by white Fringe and other rare trees, or in turn passing over open ground with well tilled fields about one, and the grandest of ever changing scenery in the distance, the way seemed all too short. The estate comprises several thousand acres, which, in the olden time, was all farmed by the owner under overseers. Of course the difficulties that surround such a system now are insurmountable, and it will take time to regulate all these things. A horticulturist can only hope that that system may prove best for the whole country, which will lead to the preservation of gardens and grounds like these for many years to come. Most of the trees are of American species, some of them being magnificent specimens, and so old and majestic, they look as if they had never been young. The grounds are laid out with excellent taste, and have remained very much in their original condition, thus affording a good illus-illustration of the prevailing taste of the last century. The most striking feature is the immense terraces, of which there are several in succession in front of the house. Each of these terraces is probably twenty feet below the other, the terrace banks being steep and grassed The descent from one level to the other is not by the ordinary method of stairs or steps, but by an inclined plane neatly sodded, and kept nicely mown. Each terrace is probably between seventy-five and one hundred feet wide, and on these are flower beds and vases, the flower beds

of course arranged in a harmonious geometrical plan, so as to represent an unity; and in these are flowers massed according to the mod ern plan—according to a tasteful arrangement of colors. Along the upper edge of the terrace bank is a walk, from which one looks on the flower picture of the terrace below. This indeed is the only way in which to show off to advantage the proper effects of harmonies of colors. When standing on a level with geometrical flower beds, much of the effect is lost. In our notes of gardening about Boston last fall, it was noted that much was made of silver sand to make a good contrast with some of the brightest colored flowers. Here a very pure white marble, ground to dust, was used for a like purpose, and with excellent effect. On the grounds is the family burial ground, in which, in a neat and unpretentious vault, lie the remains of the members of the family for several generations past; some of them have been governors of the State, or held distinguished positions, in times when it was a distinguished honor to hold them. The walls of the enclosure are completely covered with the English Ivy, reviving many associations with the illustrious past. The surface of the little cemetery is completely carpeted, or at least densely clothed with a thick set growth of Vinca minor, or the lesser Periwinkle, "myrtle" as it is absurdly called by cemetery folks about Philadelphia, and we suppose elsewhere. Improvements that will not interfere with the historical recollections connected with the grounds are in contemplation, and if the long and intelligent experience of Mr. Brackenridge, whom we believe advises in the contemplated improvements, is availed of, there is no doubt but the vandalism, which too often marks gardening "progress," will be avoided. It gave us great pleasure to meet here as gardener Mr. Mark Taylor, with whom we had no previous acquaintance, but whose evident knowledge and skill in his profession will earn for him an enduring place in our regard.

Not a great distance from Hampton is the estate of W. T. Walters, Esq., where we found one of the old Philadelphia gardeners, Alexander Frazer, installed. Here was one of the best graperies we have seen for some time—best in this, that the leaves were large and of a deep green, the fruit as black as sloes, and not an insect or a trace of disease to be seen. Philadelphians are accustomed to see good grapes at their exhibitions, but few superior to these. Mr. Walter's house is pleasantly situated on the edge of a natural growth of timber, which forms an excellent summer shade, as well as a neat back ground to the dwelling. The front looks on a well-kept lawn, in which evergreens of about fifteen or twenty years old are tastefully planted. We do not know but at this time of their lives, evergreens may be said to be in their prime Some of the best specimens of Juniperus oblonga pendula are here, and suggest to us to say that nothing can be more effective for filling up a narrow space between windows, or similar places near buildings than this plant. A large and well-arranged pond is an especial feature of these gardens. The stream is carried along in a rather narrow course, but bayed out and inleted among trees and shrubs and arbors, so as to give it the idea of an immense extent. The grounds are rather large, but are so arranged as to be easily kept neat and in good order by a small working force, a point that is too often forgotten in arranging a place.

Clifton Park, the country seat of the late Johns Hopkins, in the life of its owner, now a couple of years deceased, was one of the celebrated horticultural establishments in the country, and well kept up under the management of Mr. William Fowler, who is another of those intelligent gardeners, whom it always delights an enthusiastic horticulturist to see. The property was donated by Mr. Hopkins for educational purposes, but whether or not it will be maintained in a creditable condition horticulturally, remains to be seen. The large lake, which was too large for the supply of water, and consequently stagnated some in dry seasons, is being filled up, which looks as if some one was acting judiciously. The place is now quite sacred in the hearts of those who love to see fine specimens of the rarer evergreens. Cunninghamia sinensis is one of the finest we ever saw,—probably over thirty feet high. It varies much from seed, and some of the specimens here consequently differ much from one another. There are some remarkably fine specimens of Picea Pinsapo, P. cephalonica, and others; and those who love beautiful trees, and beautiful specimens of beautiful trees, should not fail to pay Clifton a visit. The charm of the place, however, to our mind, is the Magnolia grandifloras, which everywhere abound on the grounds. To show how rapidly they grow to be blooming beauties, we may say that these grand specimens, some of them probably between twenty and thirty feet high, were all raised or planted quite young by Mr. Fowler since he has been there—about fifteen years we believe. His secret is simply protection from wind. He plants other things about them as nurse trees, and the Magnolias besides are set rather thick. Now the Magnolias are able to take care of themselves, and now there are thick clumps of these frost proof and wind proof, and in a condition of luxuriance which we have not seen equalled in Virginia or Kentucky, and which throw out a delicious fragrance from the hundreds of flowers, for a long distance around. Rhododendrons are treated in the same way, and will delight any lover of this beautiful tribe of plants to see. With a self-sacrifice, we cannot too well appreciate our three good friends, Sands, Brackenridge and Pentland, in their anxiety to show us as much as possible,—worthy of being seen, as they thought—left us little time to see the attractions of their own homes. The few minutes we spent at Mr. Pentland's greenhouses, however, showed by the extensive arrangements for cut flowers in winter, that he was the centre of a prosperous trade; and the public offices he has held, indicates how well he enjoys the esteem of his fellow citizens; while at Mr. Brackenridge's, in addition to a beautiful stock of general nursery trees, there was an immense list of rare and curious things, which one might expect to find on the property of the assistant botanist of the Mexican Boundary Survey; and the discoverer of the curious pitcher plant, Darlingtonia Californica.

EDITORIAL NOTES.

DOMESTIC.

History of American Grape Culture.—The admirable report of Prof. Planchon, for the French Government, has been translated for "*Our Home Journal*" of New Orleans. We give the following from this source, in relation to the experiments in this country with the European grape, in connection with the Phylloxera:

"In 1633, William Penn essayed in vain to cultivate the grape of Europe in Pennsylvania. In 1790, a colony of Swiss, faithful to their generous vines of Leman, attempted to grow them in the county of Jessamine, Kentucky. A fund of $10,000 was uselessly spent in this enterprise. In 1801, they transported their penates to Vevay, Indiana, in the thirty-ninth degree of latitude. They cultivated there with better success a seedling, said to be indigenous, which they called the *Schuylkill Muscatal*, or *Cape* grape; but this variety, now almost abandoned, must have proved to be unproductive, because the vineyards of this colony gradually declined, and in 1819 the botanist Nuttall saw fields of grain waving over the earth once occupied by them. To-day, Vevay retains nothing Swiss but its name, and of its vines only a few scattered individuals. The same check occurred to the vineyard of an obscure laborer from Loraine, named Pierre Legand, who, toward the end of the last century, made repeated and obstinately persevering efforts to cultivate, near Philadelphia, roots from France, Spain and Portugal. Two analogous unsuccessful attempts are well known, those of our compatriots of the Field of Asylum, and that of Lakanal. Chased out of Texas, where they had first established themselves, the first old soldiers of the Empire, founded upon the banks of the Tombigbee River, in Marengo, Alabama, a small agricultural colony. They were naturally desirous to cultivate the vines of Europe, but all their cares ended in deceptions. Lakanal, their companion in exile, whose name remains attached with honor to the Institute and the Museum of Natural History, made equally vain efforts in behalf of the European vines, in Kentucky, Tennessee, Ohio and Alabama. It would be fatiguing to multiply the examples. The number is large, over all the extent of the Union, and I could easily gather them up out of the American books on viticulture.* But I will speak only of one quite recent, which I have seen, from notes I made in September, 1873. Kelley's Island, in Lake Erie, is a charming place, whose vineyards make it wealthy. This culture dates only from 1848. One of the first colonists, a German by birth, the late Thomas Rush, planted there, in 1860, eight hundred roots of German vines, comprising seventeen varieties, all coming from Neustadt, on the Hardt, in Bavaria. These vines pushed admirably during three years, since which they declined rapidly, and were replaced by indigenous roots. The only European roots I saw living there, very miserable indeed, and with roots garnished with Phylloxera, were two or three *Traminer*, a variety well known in Germany, which, perhaps, resists somewhat the Phylloxera. All these facts have convinced the Americans that European vines will not flourish in their country. This cannot be the effect o climate, because America has every sort of cli mate, from Florida and Louisiana, where the

*Culture of the Grape, Robert Buchanan; The C tivation of the Native Grape, G. Husmann; Culture the Grape, Strong; and many others.

banana ripens, to Canada, where rivers freeze over every year; and vines have been brought from everywhere in Europe. The same soils are found on both sides of the Atlantic. It is only in California that the European vine, planted by the Spaniards, flourish! The reason of this destruction is very small in appearance, but fearful in its devastations. It is only the *Phylloxera!* This cause, first recognized by Riley, and confirmed by my recent severe examinations and careful study. is certain. California is filled with European vines! *It has not yet the Phylloxera!* East of the Rocky Mountains it reigns supreme! Some of the American vines resist it. Let us study their characteristics."

Range of Varieties in Peach Culture.—While so many varieties of apples and pears do well only in limited locations, the peach seems more of an universalist. A good variety in one place is tolerably sure to do good everywhere. This is what the *Prairie Farmer* says of some recent trials in the West, of kinds which have been found to do well some years past in the East:

"We have fruited this year some of the newer (not new) varieties of peaches, that have not been very generally tried in the West, and give our impressions of them, hoping to elicit in so doing the opinions of others who have tried them.

"Mountain Rose we find a very good, large, handsome peach of the large Early York flavor, but more oblong in shape, and ripening before that variety. Reeve's Favorite, which Pullen, of New Jersey, placed in succession to Stump-the-World, has ripened for two years nearly with Yellow Rareripe, or a little later than Crawford's Early. It is quite a large, well flavored peach, with large stone. Tree quite upright in growth.

"Moore's Favorite, which is said to be a seedling of Old Mixon Free, ripened not far from the same time as Reeve's Favorite. It resembles the Old Mixon in many respects, but has not so fine a color. Its large size and good quality will make it, we think, a desirable variety for market, especially as it promises to be hardier than the yellow varieties ripening at the same time."

Growth Force in Plants.—A correspondent of the *Country Gentleman* has the following interesting note on growth force in plants:

"Those who have never given the matter much attention, will be surprised at the force which growing plants exert. At a recent meeting at the Academy of Natural Sciences in Philadelphia, Mr. Thomas Meehan exhibited a root of the common peony with a stolon of common couch grass (*Triticum repens*), growing through it from one side to the other. He also stated that he had found potatoes with the stolons of grass growing through them in the same manner. A short time ago, while inspecting a fine asphaltic drive, I noticed that within a diameter of four or five feet there were several spots where repairs had recently been made, and on inquiry as to the cause, was informed that after the drive became hard enough to use, these spots were observed to rise up, and continued to do so until the raised part burst open. On making repairs it was found that the trouble was caused by a few roots of the common plantain, which had not been removed when the asphalt was laid down. As the pavement was hard, and several inches thick, the steady force of growth must have been very great. Near by, a large slate slab four feet by six, was observed to rise steadily at one end without any corresponding depression at the other. Examination showed a root of plantain growing under the raised end, and supporting the whole weight of the stone."

American Horticultural Literature.—The London *Gardener's Chronicle* has recently been complimenting American horticulture on the clearness of style, and intelligent handling of the subject, which American horticultural writers display, as well as the generally graceful and courteous tone which pervades their writings. We suppose that our friend had not, at that time, read an article on "shade trees" in a recent issue of the *Horticulturist.* The editors named on the title page are Messrs. Hoopes, Taplin and Williams; but, though the article referred to is in editorial style, we are quite sure that not one of the gentlemen named, but will feel ashamed at the company in which he finds himself.

Manure for Evergreens.—In former times an idea prevailed that manure was an injury to evergreens. So many instances of these plants growing well almost in manure heaps have been noted, that people have come to believe the old opinions erroneous. We have, however, no doubt that there is some truth in the old notion. Rank unfermented material full of fungoid spawn, will communicate a fungoid growth to the trees. Very well-rotted manure is a benefit. Guano, or the excrements of birds—woodashes, or anything that is free from the seeds of fungoid matter, is the safest to apply.

Varying Taste of Insects.—Many years ago the writer of this paragraph suggested to the people of Philadelphia, the absurdity of cutting down their street trees "infested with worms"—as caterpillars are called—in order to replace them with "worm proof" species. Insects are not going to starve, because a tree they prefer as luxuries is not to be had. There is a wonderful power of adaptation in insect life in this respect. Still the idea extensively prevails that insects, as a rule, are confined, each species to its own especial plant. The following, which we find in a cotemporary, is to the point:

"Prof. Riley, in his last published report on the 'Insects of Missouri,' alludes to the tendency of certain insects to change their feeding ground, when their natural food is not easily found, or when from the multiplicity of a certain species, their favorite food is exhausted. The same fact has been mentioned by earlier writers; and Dr. Harris states that the Rose-chafer, or Rose-bug, which, during the past summer has been found in considerable numbers on the fruit of the apple trees, was, when first discovered, noticed to feed only on the blossoms of the rose, but since their prodigious increase, they have 'attacked at random,' not only the rose, but the grape vine, the cherry, plum and apple trees, together with other shrubs and garden vegetables, corn, and even the trees of the forest; by whom leaves, flowers and fruits, have been alike consumed."

In addition to this, the entomologist of the Department of Agriculture says, in a recent issue, that the Chinch-bug has attacked the potato!

FOREIGN.

Packing Plants.—To the following good hint from the *Gardener's Record* we would add that for mailing, if the brown paper be oiled first, much drier moss may be used, and thus more security afforded, against damp:

"There is greater danger arising from the presence of too much moisture than too little. The best packing material is Sphagnum or bog Moss, and this should be just so damp only as to be elastic to the touch. Plants packed in this, if not too damp, will remain for weeks uninjured; that is, if the plants are at rest. Another thing is, to pack close. If sending by post, take a piece of strong brown paper; lay the just damp, not wet, Moss upon it; put the plants upon the Moss, and more Moss over the plants; then begin at one end of the paper and roll up hard, secure with a string, and then put another paper over for direction. So in packing in boxes; use the Moss just damp and have the box crammed down hard, so that there can be no possibility of moving or shaking in transit."

Strawberry Culture in England.—It is instructive to compare the customs of other countries with our own. This is the way, according to the London *Gardener's Chronicle*, strawberries are cultivated in West Cornwell:

"That as a rule no special preparation of the soil is made for this crop. Autumn planting is exceptional: when planted at that season the soil is prepared. The usual time for planting is in the spring, and, as before stated, with the Onion crop. Well rooted runners which have been left in the beds through the autumn and winter are planted singly at eighteen inches apart from row to row, and about a foot from plant to plant. In most instances the runners are allowed to grow until the beds are literally full, the alleys only being kept clear. The second year after planting the beds are full of fruit. In the month of April of the second year a dressing of guano or a mixture of dung is placed between the plants. Previous to this dressing the beds are raked, everything loose cleared away—leaves as well as runners forming a part. Some of the readers of these notes will be shocked to hear that, after the above dressing of the beds, a horse drawing a chain-harrow is often seen rattling over the beds, for the purpose of spreading and settling the manure between the plants. A large Thorn bush was formerly used for that purpose. The fidgetty notions about the crowns, about the leaves, and about the runners form a lessen these gardeners have not cared to learn; yet, notwithstanding, they get enormous crops of fruit year after year, and if the beds do not get weedy, especially with Crowfoot, they go on profitably with this treatment, without replanting, from nine to twelve years. The old Caroline has been the favorite kind for market purposes, but the sort called Sir Harry is replacing it."

Gas Injurious to Trees.—In a recent article on shade-trees in cities, Mr. Sutherland refers to the many losses which tree planters sustain through the action of the coal-gas, leaking through the pipes, on the roots of trees. It is singular that after all the evidence given in the *Gardener's Monthly* and elsewhere, some people yet believe there is no injury from this cause.

"Seeds were sown in earth through which gas had been passed for an hour or two daily during a long period of time. The seed sprouted, but the rootlets failed to grow, and soon decayed.

A healthy plant set in this soil perished in ten days. Dr. Boehm considers that these experiments explain the decline and death of shade-trees in our cities. The cause is the escape of of coal-gas from leaking mains; and the remedy which the author proposes is to inclose all street gas-pipes within larger tubes, having openings to the air, through which ventilation may be maintained. But gas companies will scarcely be induced to take such expensive precautions against the destruction of shade-trees.

"Mr. J. Boehm communicates to the *Chemical Central Blatt* the results of a series of experiments testing the effect of coal-gas upon growing plants. Of ten plants in pots (varieties of fuchsia and salvia), among the roots of which coal-gas was conducted through openings in the bottom of the pots, seven died in four months. To discover whether their death was owing to the direct action of the gas, or to the poisoning of the soil."

Taste at Exhibitions.—The *Gardener's Record* has some excellent remarks on the want of taste shown by exhibitors at our horticultural fairs. What it says of these things in Europe, has often struck us as respects our own, and it may profit our friends some to read what it says:

"At times when Turner, Paul, Cant, or others of our great growers exhibit at some large show, where there are several classes open for competition, their boxes are truly astonishing, usually requiring a light van to take them hither and thither when not upon the railway. Now to devise any scheme that would enable them to dispense with all this cumbrous weight of wood would be to them an inestimable benefit, provided the Roses could be as safely carried about and as easily staged without the boxes as with them; but whatever may be done eventually in the matter of staging, I fear that no better mode of transit of the cut flowers offers at present. Of course, a long line of monotonous looking boxes, placed upon a baise-covered table, is not a picturesque spectacle, even when covered with lovely Roses, but fortunately, the spectator is so much absorbed in the contemplation of the floral beauties before him that he scarcely notices the ungainly boxes, not, perchance, being anxious to be hypercritical where so much that is lovely is enshrined. I have elsewhere suggested, and again do so here, more for the consideration of managers of flower shows than in a dogmatic form, that it would be possible to arrange along the edge of the table on which the competing Roses are o be placed long narrow and hollow troughs filled with one or more of the creeping Selaginellas, so as to preserve an edging of even, green verdure; these troughs must, of course, have been previously prepared for the purpose. Then at the back of the table or stage might be placed a line of small foliage plants, Ferns, Palms, &c., and the large collections of flowers should have dividing lines between them of some dwarf bushy Ferns, or Coleus, or similar plants. Then the whole of the enclosed spaces should be filled with green moss similar to that used in the boxes, carrying it behind a few inches above the level of the pots, and sloping down to the front to nearly the height of the Lycopod. Then into these beds of Roses the flowers still in their water tubes, might be placed, the blooms being arranged six deep, and in this way a very beautiful effect would be produced without the quality of the blooms being depreciated, or the judges powers of observation and comparison impaired. In the case of 24's and 12's all the competing collections might thus be grouped together, and good effects might be obtained if the popular classes of twelve flowers of one kind were thus arranged, and the judging of these, often a difficult matter, would thus be rendered more easy. Any attempt, however meagre, to break up the present monotonous method of staging cut Roses would be eagerly welcomed, and the committees of those exhibitions will do well to turn their attention to this matter."

Early Rose and Late Rose Potatoes.—We quite agree with the experience of a correspondent of the *Record*, in reference to the Early Vermont. We know of no difference whatever between it and Early Rose. We also endorse what he says about the late Rose, if by this he means Campbell's Late Rose. It is not often that American and European experience in Potatoes agree so well:

"'R. D.' has alluded to the new American Potato, Extra Early Vermont. The unfortunate resemblance that this variety bears to the Old American Early Rose, in all its points, is extremely awkward, as it is just probable that purchasers may not receive, in all cases, the true thing. I was myself somewhat startled the other day by receiving an offer of twenty bushel of the Early Vermont from an amateur in the north, who wished to dispose of that quantity. Naturally, my suspicions as to its truthfulness were awakened, because this Potato was selling at the high figure of 2s. 6d. per lb. last spring, and it is hardly likely that a mere amateur would have invested in something like a couple of hundreds of pounds of it, as he must have done so to have obtained a crop that will allow him to spare twenty sacks of seed tubers. Having grown the Extra Early Vermont this season, I am compelled to the belief that it is a greatly over-rated Potato. If earlier than the Early Rose, it is almost imperceptible; the same may also be said as to its cropping and quality; indeed, when I cooked tubers of both kinds I liked the Early Rose rather the best. I fear that it will never maintain the character that it seemed to possess at Chiswick last year, when the Fruit Committee gave a First-class Certificate. I insisted last year that Potatoes were, as a rule, so uncertain that any kind that would do well in one place would not, perchance, do well in another, and therefore certificates were misleading. However, it is little use arguing with the R. H. S. committees. The new Vermont Beauty is really a fine Potato, and will, in my estimation, shortly supersede the Red Skin Flowerball, and, when well grown, it is of a flattish oval in shape, of good form, and the skin of a clear bright red color; the flesh is soft, and it cooks well. The Late Rose is with me a grand Potato, and so far the best of all the Americans. This again resembles the Early Rose, but the haulm is taller and later in ripening off, the tubers are also rather rounder in form, a trifle deeper in color, and usually netted on the nose. It is a wonderful cropper, quality is excellent, as the flesh is white, and boils like Regent. It is also a good keeper, and will make a first-rate main crop variety. I am commending this kind strongly to the attention of our London market growers."

The Alisma plantago or water plantation, is a very beautiful plant, and well worthy of culture, though but a wild thing both in America and Europe. There is not enough attention given to our native wild plants. Recently we saw in a Boston paper, that some one had laughed at a neighbor who had imported the beautiful Kalmia latifolia, not knowing that it could be found wild a few miles from his door. But to our mind, those are most to be laughed at, who, knowing it grew here, had never moved some to their own gardens. It was better to get it from Europe than not to have it at all. This is what a correspondent of the *Gardener's Magazine* says of the *Alisma*:

"This noble British plant may be seen in perfection now in many a stream, and it does not disdain to adorn the still pond with its fine bright green leafage, and beautiful head of tiny pinky-white flowers. It is the only intruder I ever allow in my water-cress brook, for its nobleness forbids its destruction, and it does not mix with the cresses injuriously, as the celery-leaved Ranunculus and many other water weeds do. For the first time in my life, I have this season grown it as a pot plant, and I am so pleased with it that I make this note in hope of obtaining for Alisma plantago a large circle of admirers, to whom its cultivation, with other handsome aquatics, will prove the source of a new pleasure. When at its best, as my examples of it are at the present time, the inflorescence has a most elegant appearance, the branchlets being almost as fine as hairs, and of a vivid green color, while the myriad little flowers that bestud the racemes may be likened to a cloud of butterflies. This plant presents the rare characteristic of flowers with three petals, a most unusual number. It is interesting from its peculiar adaptation to its habitat. Where the water runs deep and strong, the leaves and their footstalks are considerably elongated, and the variety is called lanceolatum; but where the water is shallow and still the leaves are shorter and broader, and the leaf-stalks are shorter also. The plants I have in pots, have shorter and broader leaves than others, that still remain in the watercress brook, showing that the plant adapts itself at once to its situation, and needs no refinement of orgaization through several generations by what is termed the 'process of selection.' Water plants have obtained but little attention hitherto, but whoever will begin with Alisma plantago will be likely to discover that they are as easy to provide for and manage as any other plants that are really worthy of cultivation."

Premium for Vineries.—In Ireland they are offering premiums for the best vineries as well as for the best grapes. Mr. Smith, gardener to H. Valentine, Esq., near Belfast, gained the highest. The average weight was nine pounds to the square foot. The house in question is a lean-to, 60 feet long, and 17½ feet wide, in two divisions, each 30 feet. The first division contained Charlesworth Tokay, Mrs. Pince's Black Muscat, Black Alikante, Frankenthal, Hambro' Duchess of Buccleuch, Royal Muscadine (grafted on Mrs. Pince, 3 years ago, bunches weighing on an average from 3½ to 5 lbs.,) Madresfield Court and Black Hambro'. The other house contained Black Hambro', Mrs. Pince, White Frontignan, Madresfield Court, Grizzly Frontignan, Tynninghame Muscat, Royal Vineyard and Muscat of Alexandria. The Royal Vineyard is generally condemned, it being a bad variety to set, but here it was beautiful.

SCRAPS AND QUERIES.

AZALEA.—*B.*, It is spelled Azalea, not Azalia. The name is derived from the Greek Azaleos, arid, in allusion to the dry places in which the original species grows so say the commentators.

VICTORIA REGIA.—A Chicago correspondent asks: "Can you tell me if there is a plant of the Victoria Regia in existence in the United States from which I could procure a few seeds to send to New Grenada? The last plant I have known of was Mr. Allen's, of Salem, Massachusetts, which died many years ago. Can you give me the address of any one from whom I could possibly procure seed?"

[So far as we know, there is not now a plant in the Union. If there is, we should be obliged for the information.]

STARTING A NURSERY.—A Holly, Michigan, correspondent says: "I want information in regard to the propagation of evergreens I am engaged in the fruit tree department of the nursery business in a small way, but much prefer the ornamental. Am anxious to put out from one to two acres of the *most desirable* ornamental trees. Heretofore I have bought young plants from 12 to 15 inches high, but my means will not admit of my buying a sufficient number of them to set as many as I wish to, consequently have got to obtain them from seed if possible. I have purchased several works on evergreens, etc., but find no instructions adequate to a beginner. Sent for Hoopes Book of Evergreens; it came last night, but will not answer my purpose. Now, what I would like you to do for me is this, make me out a list of the most saleable evergreens, and other ornamental trees, that I would be the most successful in propagating from seed, with information how and when to sow them, or how to propagate some varieties from cuttings. In other words, if you will give me the needed information to enable me to propagate a sufficient number of the most desirable ornamental trees to set out two acres of land, you will confer a great favor. I cannot find the desired information in books; and unless I can procure it in this way, I shall have to give it up."

[It would be impossible to give here, or in any form, the information necessary for our correspondent to become a successful propagator. It only comes from experience. With such general hints as he finds from time to time in the *Gardener's Monthly*, joined to an experimentive disposition, he might accomplish it. In any event he must expect to lose largely before he succeeds well, for such information is only learned by watching failures, and then learning why the failures are, and how to avoid them in future. Get a few of each, and try how they do.]

THE CHARTER OAK.—We have been under the impression that the celebrated Charter Oak was of Quercus alba, or the White Oak. At Hartford, recently, we were shown a tree as a seedling from it, which was of *Quercus discolor*. We wrote to a friend to know if this was a mistake, who writes in return as follows:

"I was strongly impressed that the 'Charter Oak' was the Quercus alba, from an observation of it many years since, when I was less familiar with trees than at present; and this impression has remained with me to this time. But I am in the wrong. It is the Quercus discolor, or the Swamp White Oak, as you will observe from the small dried leaves which I enclose, and which were taken from the 'Charter Oak,' after it had blown down, about eighteen years since. He had carefully preserved a branch with its leaves, which he showed me. So this settles the question. The leaves are small, but the tree was old, and not vigorous."

PEACH YELLOWS.—*R.* says: "Some time since I read your views concerning the 'yellows' in the peach tree, that a fungus disease would always be found about the roots. That the disease is fungous in its character I have long had no doubt; but is the disease primarily in the roots, or in the sap vessels? I am sorry to say that I have made no careful observations on this point. It is no doubt contagious, and can be communicated by inoculation, and perhaps may be carried by insects from the blossom of one tree to another. It is perhaps the old story, which has caused endless contentions among the faculty, as to the disease primarily or secondarily, of the solids or the fluids."

[Careful observations made the three past years by the writer of this, but which he has not yet had time to write out in detail, satisfies him that the fungus which produces the "yellows," attacks *healthy* roots, and thus it is primarily the *cause* of the disease. Full suites of specimens, with illustrations, were taken to Boston to explain verbally before the American Pomological Society, but there was no time for it. Another opportunity may offer some day. A mere article is of little service, without the living specimens to show the course of the evil.—ED. G. M.]

BACCHARIS ANGUSTIFOLIA.—Somebody, though we have a letter or card of explanation from nobody, sends us a specimen of the above,—we suppose for a name. It is a Southern shrub, and well worthy of cultivation.

NEW AND RARE FRUITS.

THE CAYWOOD PEAR.—*Mr. A. J. Caywood, Poughkeepsie, Oct. 19th*, says: "I send you a much hurried sketch of a new pear, which I have raised from the seed of the Flemish Beauty, with the pollen of the Beurre Bosc applied. It resembles the Flemish Beauty more than any other pear; but while that variety is largest in the middle, this is bell-shaped. The original was painted last week by Prof. Van Ingen of Vassar College; and all who saw the picture and pear together, declared that the former did not do the latter justice in color. The tree, with me, is fully as great a grower as Clapp's Favorite. It bore for the first time last year, when it was considered as good as Beurre Bosc. There is no pear so handsome among the thousands with which I am acquainted, and there is no good pear, unless the Duchess can be so called, that is larger. One branch ¼ inch in diameter, and 2 feet long, the second year from the graft, has formed this season twenty-eight fruit buds.

"I send you a report of a number of the leading horticulturists of the Poughkeepsie Society.

"Very respectfully,

"A. J. CAYWOOD,

"Poughkeepsie, N. Y."

[The sketch is 4¾ inches long, and 3½ wide, deep lemon yellow, with a crimson cheek. We are glad to see attention given to raising *beautiful* fruits as well as *good* fruits. We have not many pears in which the two unite. We give below the report of the Committee referred to, though somewhat ambiguous. If the pear be too ripe to judge on October 7th, what is meant by a month later in maturing than Flemish Beauty? Even here one would have no difficulty in having Flemish Beauty on October 7th.—ED. G. M.]

"Two specimens of a pear raised by our townsman, A. J. Caywood, and on exhibition in the show windows of Smith Brothers, having attracted the attention of passers by, a Committee of some ten of our leading horticulturists met to test their qualities. Mr. Caywood says that it is a seedling of Flemish Beauty, which it resembles more than any other variety; but it was the opinion of the Committee that it excels even that famous pear in most desirable qualities—in size measuring 11½ and 11¾ inches in circumference, and weighing 12 and 15 ounces respectively; in beauty of appearance exceeding anything we have ever seen. The quality is good, but the specimens are too ripe to do it justice. It promises to be nearly a month later in maturing, and not so readily rotting at the core.

"Poughkeepsie, Oct. 7th, 1874.

"EDWARD MERRITT,

"HENRY REED,

"JAMES HAGGERTY."

KINKHEAD APPLE.—An Ohio correspondent sends us a specimen of this—a most superb apple in all respects.

APPLE PEAR PIPPIN.—*C. B, Hightstown, N. J.*, says: "I send you to-day, by express, (paid) a small box containing a few apples, which I wish you to test. They are said to be a seedling originated in this vicinity, and are called here Pear Pippin. I have four large trees, from which I got the fruit sent, which stood in a hard grass sod, and our long drouth has made them smaller than common. They are very productive, and bear heavy crops every year. There are a few other trees here, all of the same quality."

[Some resemblance to Bellefleur, but larger,

and in every way we think better. We regard it as one of the most promising varieties that have come before us for some time.—Ed. G. M.]

Fox Seedling Pears.—*Mr. B. S. Fox, San Jose, California*, writes: "A few days ago I forwarded two boxes, per mail, of seedling pears, hoping they will arrive in order. Though some folks doubt the origin of my seedlings, I think you will notice half of the kinds I send bearing that character. Next week I shall forward others. 64, if it is all right, is a *gem*, if possible better than Seckel, later, having to pull them before maturity, and the long carriage must tell against them; still I am satisfied with my success."

[We had some of Mr. F.'s seedlings last year. These are superior to those. We examined one, which has been named "B. M. Fox," in company with one of the leading Belgian pomologists, who happened to be in this country. We were unanimous that no better flavored pear had come before us. We shall refer to these again.—Ed. G. M.]

Beatrice and River's Peaches.—*T. C. W., Sarnia, Ont.*, writes: "Last Spring I planted the 'Beatrice' and 'River's' Peaches. I know nothing of them except they are being planted at the South. Will you say what their size and earliness is as compared with Hale's? A number of us are turning our attention to peach growing here, on the south shore of Lake Huron, with good probabilities of success, and are of course interested in getting the right kinds, and knowing where to get the trees. I have had a good crop from thirty Hale's—could scarcely have wished for anything finer; but they say it rots in some seasons. We have had it very dry."

[Will any of our correspondents who have had experience please reply?—Ed. G. M.]

The Brighton Grape.—*J., Rochester, N. Y.*, writes: "Our State and Western New York fairs were held here last week, and among other good things that were on exhibition, I noticed the Brighton Grape. As this is a new variety just coming out for public favor, I thought you might like to see it, and hence have sent you by mail, this evening, a small bunch, and hope it will arrive in good condition, so you can both taste and see. This was raised in Brighton, hence the name, from seed of Concord crossed with 'Diana Hamburg,' and from all I can see and learn of it, it must become a valuable variety, as it is fully as vigorous as the Concord, and ripens its fruit fully as early as Delaware. It was exhibited at both of our fairs, and called forth universal praise. I suppose the grape fever is about dead, and most of your readers are sick of hearing of 'new grapes;' and unless these coming out now have some decided character and quality, it will be hard for them to obtain a foothold; but I think when we remember that this is as early as Delaware, and as hardy as Concord, it must have some admirers."

[Reached us on September 25th—a very good grape. Bunch of the size and appearance of Clinton, to which it is superior in flavor, though not equal to Delaware.—Ed. G. M.]

Plowden Peach.—*H. M. E., Marietta, Pa.*, writes: "I send you, to-day, a Plowden Peach (Hail cut of course). I bought two trees of Mr. Clagget, planted them side by side of the seedling trees from which I sent you a few specimens on 26th ult. Is it Hale's Early, or is it a later kind? With us it seems to be later, but being from young trees, it may not be fair to make a comparison. The trees were planted the same time as my seedlings; are about the same age. This week will close up the Hale's with us."

"P. S.—I send also a few all-summer apples to test."

[Some of these new early peaches take to so much variation in point of earliness, and other characters, that we dare not take the responsibility of deciding on their identity or otherwise. We have all seen, the few past years, a new peach D, "ten days earlier than C," again, B, "ten days earlier than C," and recently, a new one A "twenty days earlier than B." Does any one believe that we have a peach now forty days earlier than we had ten years ago? yet the *comparative* dates seemed true to those who made the statements.—Ed. G. M.]

Whitehall Grape.—A correspondent says: "We send you, herewith, a bunch of our new Whitehall Grape, picked in Whitehall, N. Y., on the 15th of September. At that date no other grapes were ripe there, not even Hartford Prolific,—and this grape would have been improved by hanging a few days longer. It lacks its usual sweetness, but you will observe its tenderness to the very centre, dissolving in the mouth, so as to leave nothing but the seeds remaining; also notice the size of bunch and berry. In previous years it has ripened in *August;* but all the varieties at Whitehall are three weeks later in maturing this year than heretofore."

[The grape was of the same quality as Clinton, but with larger and handsomer bunches and fruit. It reached us about the end of September. Its value will depend on its extra earliness.—Ed. G. M.]

Seedling Peach.—*J. A. R., Paoli, Sept.* 9, writes: "I send by mail this day, a few specimens of seedling peach, which grew on the farm of R. C. Shoemaker, Montgomery County, Pa. Are they worth propagating? We think them a good peach."

[Good, but not of sufficient excellence to warrant its being added to our already large list.—Ed. G. M.]

Grape from Cold Spring, N. Y.—I send you by mail, to-night, a sample of a new variety of grapes, with two leaves from vine. The vine has overborne the present season, and matured a very heavy crop. Those that I intended to send you were taken off, being far better specimens than what I send. Those that I send will give you an idea of the general character of the grape, etc. Vine a free grower. If you think it worthy of notice, please answer in your *Monthly*.

[These grapes were enclosed in an envelope box, and were smashed into a jelly, the juice getting through in every direction, and damaging a whole mail, bringing much complaint to us from the Post Office authorities. In a bag, under perhaps tons weight of mail matter, a paper box has no chance. We often get boxes in this condition; and this hint may be useful to numerous correspondents.—Ed. G. M.]

Brier's Sweet Crab.—*Mr. A. G. Tuttle, Baraboo, Wis.*, writes: "We send by mail, to-day, a package of the fruit of a new Crab, which is causing quite a sensation West. It is sweet, and perfectly devoid of astringency, of better taste, peculiar to the crab family. Is called 'Brier's Sweet Crab.' Please test quality and size, color, etc."

[This shows a remarkable improvement in crabs. It was quite as good to eat as any ordinary apple. Indeed one would not know by the flavor alone, that he was eating a crab.—Ed. G. M.]

Bustian's October Cling.—A Georgia correspondent says: "I send you per mail, this day, a Bustian's October Peach. The one sent is about the average size. There are much larger ones on the tree that this came from, and also smaller ones. It is sent for your opinion as to its rank among late peaches."

[This specimen must have been accidentally an inferior one, as we know our correspondent to be as good a judge of peaches as we are.—Ed. G. M.]

The Golden Champion and Royal Ascott Grapes.—We had the pleasure of receiving through Mr. A. W. Harrison, Recording Secretary of the Pennsylvania Horticultural Society, specimens of the above from Mr. Sturtevant, of Burlington, N. J. One is a rich amber, the other a dark black. We think we never tasted superior grapes; and their addition to American hothouse grape lists is welcome. How free to cultivate they may be, is a point on which we have no information. In England the reputation of the Golden Champion is, that it is more subject to disease than some others.

Grape Seedlings from Mr. Geo. Haskell, Ipswich, Mass.—These are some of the best we have seen, and when the high northern latitude is considered, show how marked has been grape improvement of late years. There are among them black, white, and red bunches; and some of the bunches of considerable size.

NEW AND RARE PLANTS.

New Roses.—Messrs. Miller & Hayes send us specimens of a large number of New Roses, blooming on the first of October, among these particularly, five we note: Hybrid perpetuals: Mad. Guillot de Mont Favel, a beautiful deep blush, and of full cupped petals, to whom we take at first sight in spite of her horrid name; Elizabeth Vigneron, another large full petaled variety, of a deep purple Rose; Paul Neron, a very large light rose; Mad. de Ridder, crimson rose.

There are some beautiful Teas among them, especially Complesse de Nadallac, a bronzy salmon; Montplaisir, a rosy cream, and which we have before noticed favorably in our notices of exhibitions; La Jonquille, one of the deepest of yellows, almost orange, and La Nankin, a white with a nankin base.

DAHLIA COCCINEA.—Mr. Salter exhibited in London recently cut flowers of Dahlia coccinea, an old but extremely handsome species of unwonted brilliancy of color—in fact, of a vivid fiery scarlet hue. The single flower looked like a rich colored form of Anemone japonica. Like the ordinary Dahlia, it is a tender perennial, propagated in the same way, growing from three feet and a-half to four feet high, and blooming at this season of the year. After all that our cultivators have done in improving the quality of the Double Dahlia of our day, they have never been able to get into it the splendor of hue belonging to this brilliantly colored species. It is a plant that richly deserves to come into cultivation again, and many of our horticulturists were making inquiries for it.

AZALEA MOLLIS.—In a recent number we noticed the fact that this new and distinct species had been successfully introduced by Messrs. S. B. Parsons & Sons of Flushing. Since then we note in the *Gardener* of London, that there have been beautiful hybrids of it raised in England. A correspondent of that journal says:

"Azalea mollis hybrids are a new race of great beauty and value, the parent of which was introduced some years ago from Japan. These far exceed in the size of the flowers any of the Ghent varieties of A. pontica, and though inferior to some of them as yet in deeper and more brilliant red colors, there is little doubt but that they will be improved in this respect in the course of a few years. At present they greatly exceed the latter in the purity of all the yellow, salmon, white, and light-red tints which they have exhibited. The flowers are as large as those of the hardy Rhododendron, and open like a perfectly formed Indian Azalea. These are first-rate forcing plants, and nothing that can be introduced into the conservatory in the winter and spring months can produce a finer effect than well-bloomed plants of the different varieties; they present tints of color to be found in no other class of plants available for this purpose. There are not many varieties at present in the market, but more will be introduced soon; and they cannot fail to be greatly in demand when they come, as they will be prized not only for forcing but also for ornamental shrubberies in the open air, for they are perfectly hardy, and bear a general resemblance to Azalea pontica in habit of growth and foliage; but in both respects they are superior to that species. Planted on rockwork, when extensive enough to admit of groups of these charmingly varied and brilliant hardy shrubs, and in beds, used freely along with evergreens on sloping banks, nothing could exceed the splendid effects they are capable of producing."

A NEW COLORADO CONIFERA.—Dr. Englemann, has been exploring in Colorado this summer, and has found Abies concolor in Glen Eyrie, at the foot of Pike's Peak. It is a sad commentary on the use of eyes when it is remembered that such usually wide awake fellows as Meehan, Hoopes, Parry, Porter, and other collectors have been through this Glen without seeing it!

WEEPING MAHALEB CHERRY.—Of a London exhibition the *Record* says:

"Foremost among novelities was a standard plant of the old perfumed Cherry, shown under the name of Cerasus Mahaleb pendula, with the graceful drooping habit of the Weeping Willow."

PHLOX, MISS ROBERTSON.—A correspondent of the Dublin *Record* says of this, at a London exhibition:

"A spike of the new white-flowered Phlox, Miss Robertson, sent out by Messrs. James Cocker & Son, Aberdeen, was sent from my own garden, cut from a plant growing in a pot in my conservatory. It forms a huge spike like a Hyacinth; the pips are large, well rounded, and of the purest white; some of them measure an inch and a-half in diameter. I think it such an excellent thing to grow in pots for summer blooming in a conservatory; and it is said to force well early in the year. It belongs not to the ordinary decussata, or late flowering section, but to the suffruticosa, or, as it is sometimes termed, the omniflora class.

NEW ROSES, OF 1874.—According to the latest reports the following seem among the most popular of New Roses, in England:

Alexander Dickson, beautiful form, good petal, very full, color pure rose.

Baronne Vittat, flowers large, good form, rosy-flesh color.

Etienne Dubois, rich velvety crimson, large and full.

Etienne Dupuy, a vigorous grower, fine form, color beautiful bright rose, the reverse of petals silvery.

François Courtin, very free bloomer, and very fragrant, rich purplish cerise, full and fine shape.

Helvetia (Tea), vigorous grower, fine form, flowers large and full, salmon suffused with rosy-peach towards the centre.

Jean Dalmais, very large flower of fine form, rich shaded rose.

John Harrison, flowers large and full, dark brilliant crimson, shaded with velvety black.

Madame la Comtesse de Maussac, fine form, large and full, bright rose.

Madame Louis Leveque, growth vigorous, flowers large, full, and globular, color bright clear rose.

Madame Marie Duncan, flowers large and full, color beautiful bright rose.

Madame Marie Fuiger, flowers large and globular, bright rosy-flesh color.

Madame Saison Lierval, a free bloomer, color fine carmine, with brilliant centre.

Mademoiselle Dumaine, flowers large and globular, bright rose.

Mademoiselle Philiberte Pellet, flowers large, fine form, color bright red, free grower, and abundant bloomer.

Marie Theresa, flowers fine form, full and very sweet, pale rose.

Miller Hayes, flowers large and full, fine cup-shape, color crimson, shaded with velvety red.

Olga Marix, flowers fine form, medium size, color beautiful white flesh.

Ophelia (Tea), a profuse bloomer, flowers medium, fine form, color clear yellow.

Perfection des Blanches, growth vigorous, flowers pure white, full, fine form.

Paulin Talabot, a very profuse bloomer, color dark reddish carmine.

Prince Paul Demidoff, flowers large and full, color fine clear carmine rose.

Thomas Mills, flowers extra large, a free bloomer, color bright rosy carmine, with whitish stripes.

Theodore Butcheter, fine form, full and large purplish violet, with fiery centre.

Triomphe des Rosomanes, flowers excellent form, large and full, deep black velvety crimson, shaded with red towards the edges.

FOREIGN INTELLIGENCE.

LARGE APPLES IN ENGLAND.—*The Garden* gives the following dimensions of some superb specimens grown on dwarf trees: While Calville, weighing 1 lb. 4 oz, and 15½ inches in circumference; Canada Reinette, 12½ inches in circumference; Belle de Bois, 1 lb. 7 oz., and 15 inches in circumference. The trees were trained in cordons, and, of course, every advantage of thinning given the fruit. The largest apple which we have seen in this country, was a Fall Pippin, grown in Cayuga County, N. Y., and weighing 23 ounces—of course on a standard.

NATIVE COUNTRY OF THE WEEPING WILLOW.—The *Gardener's Chronicle* says: "What is the native country of the common Weeping Willow, Salix babylonica? Babylon, of course, would be the general reply. Prof. Karl Koch, however, very conclusively shows that China is the home of this tree. The word rendered Willow in the 137th Psalm should, with infinitely greater probability, be applied to the Populus euphratica. Under the name Salix elegantissima, Prof. Koch describes a new species of Willow from Japan, with branches even more markedly pendulous than those of S. babylonica, which, by reason of the misnomer above alluded to, Dr. Koch proposes to call S. pendula. S. elangantissima (Koch) has been called in nurseries S. Sieboldii and S. japonica, but both these names are preoccupied. It has the great advantage of not being injured by insects like other Willows."

WINTER BLOOMING CARNATIONS.—Named varieties are increased by cuttings, which, for winter-flowering, are best taken off in February; one good joint and the growing point will be enough. They may either be placed singly in small pots, which I prefer, as there is no fear of disturbing the roots in potting, or they may be inserted round the sides of a pot in sandy soil, placed in a mild bottom heat, and covered with a hand or bell-glass. If kept moist they will be rooted in a few weeks, and their be-

ing so may be known by their growing freely. Then admit air gradually, and withdraw to a cooler house, when they may be potted singly, or if in single pots, placed in those 4½ inches in diameter. In June they may be turned out of doors after being well hardened-off, standing them on ashes in the sheltered position. It does not answer to plunge the pots, for though the plants grow more freely, the check consequent on removal is too great ; at least, they do not flourish after removal. They ought to have 6 or 7-inch pots after the pots are full of roots, and before becoming pot-bound. These sizes of pots are sufficient for plants the first year. By the middle of September they should be housed and have a light airy position. To flower satisfactorily the temperature should not be much less than 50° from fire heat ; the reason they do not flower in winter in ordinary greenhouses is solely want of temperature. As the plants advance the stems will need the support of neat stakes. When showing for bloom weak liquid manure may be given at every alternate watering.

Cuttings may be put in at intervals throughout the year, monthly if thought desirable, but three times will be often enough—namely, in February, June and September. The February cuttings will give a late winter bloom, the June ones a summer one, and those put-in in September the best autumn and winter-flowering plants. They will strike without heat under a glass in the greenhouse shaded, but the rooting is more speedy in the bottom heat. Those having a few plants will do well to keep up the stock by putting in cuttings occasionally, as from some unknown cause the plants die after they are large. Large plants need not be potted oftener than once a year, giving the least possible shift ; but I have ceased to care for old plants, and intend growing young plants and cuttings.

To prevent the bursting of the "pod" of bloom place a ligature about half way up the calyx ; the best is an india-rubber band, such as may be had of most stationers. Cut down the upper part of each division of the calyx to the band to enable the flower to open regularly.—*Journal of Horticulture.*

Graceful Combinations.—We are glad to notice evidence of horticulturists becoming awake to the high natural beauty that may result from allowing climbing plants to grow on trees —their natural supports. Thus, at Messrs. Jackman's, the other day we saw the handsome Clematis montana, growing through Kœlreuteria paniculata. The snowy flowers of the Clematis appear among the bare branches before the leaves open on the tree. Graceful combinations of this kind may be made in infinite variety. —W. R., in *Garden.*

Skeletonizing Leaves.—The solution for destroying the soft tissues is made by first dissolving 4 ozs. of common washing soda in a quart of boiling water ; then add 2 ozs. of slaked quicklime, and boil for about fifteen minutes. Allow this solution to cool ; afterwards pour off all the clear liquid into a clean saucepan. When the solution is at the boiling point, place the leaves carefully in the pan, and boil the whole together for an hour. Boiling water ought to be added occasionally, but sufficient only to replace that lost by evaporation. The epidermis and parenchyma of some leaves will more readily separate than in others. A good test is to try the leaves after they have been gently simmering (boiling) for about an hour, and if the celluler matter does not easily rub off betwixt the finger and thumb beneath cold water, boil them again for a short time. When the fleshy matter is found to be sufficiently softened, rub them separately, but very gently, beneath cold water until the perfect skeleton is exposed.

The skeletons at first are a dirty white color: to make them pure white, and therefore more beautiful, all that is necessary is to bleach them in a weak solution of chloride of lime. I have found the best solution is a large tablespoonful of chloride of lime to a quart of water ; if a few drops of vinegar are added to the bleaching solution it is all the better, for then the free cloride is liberated. Do not allow them to remain too long in the bleaching liquor, or they will become very brittle, and cannot afterwards be handled without injury. About fifteen minutes are sufficient to make them white and clean-looking.

After the specimens are bleached, dry them in white blotting paper, beneath a gentle pressure. Of course in this, as in other things, a little practice is needful to secure perfection. Simple leaves are the best for young beginners to experiment upon : vine, poplar, beech, and ivy leaves make excellent skeletons. Care must be exercised in the selection of leaves, as well as the period of the year and the state of the atmosphere when the specimens are collected, otherwise failure will be the result. The best months to gather the specimens are July to September. Never collect specimens in damp weather, and none but perfectly matured leaves ought to be gathered.

A soft tooth-brush is a capital instrument for removing the soft tissues—much better than the finger and thumb. Indeed it is always advisable not to touch the leaves during the process, but to float them on a piece of wood when the brushing process is to be gone through.—J. B. C.—*English Mechanic.*

The first Robinia Pseud-Acacia introduced into Europe.—To a gardener visiting Paris, one of the most interesting sights is all that now remains of a somewhat remarkable tree which has stood for the last 237 years in the gardens of the Museum. The seed from which it sprang was received amongst others from North America in the year 1601, by Jean Robin, Professor of Botany at the Jardin des Plantes, and, thirty-five years later, the subject of our notice was planted in the gardens of the Museum by Vespasien Robin, so that it is now probably 272 years old. The top of the tree, having gradually decayed, was cut off many years since, and the stump of a trunk which remains is about 9 feet high, and 3 feet 3 inches in diameter at the base. It bears at its summit the stumps of three of the principal branches, to which the two living branches are secured and supported by bands of iron. The stump of the trunk is very much decayed, and abounds in splits and crevices, which, with a view to its preservation, have been carefully filled up with plaster. The branches which still continue alive, however, exhibit a considerable amount of vigor, which promises a prolongation of existence for many years to come. Near the top of the stump may be seen a label bearing the following inscription :—

Robinia Pseudo-acacia, L.
Acacia Virginiensis spinosa, Roy.
Amerique septentrionale
Introduit en France par Jean Robin
en 1601,
.Plante par Vespasien Robin,
en 1636.

This venerable tree is considered to be the parent of all the varieties of Robinia which are now so extensively spread over the continent.—*Garden.*

Canterbury Bells.—So long as the colors of these fine old border flowers were confined to blue and white, though constantly grown side by side, breaks of form and color were unknown, but, by and by, when we got from the continent a rose-colored variety (double and single) after a year or two of cultivation here, crossing with the other colors ensued, and from the seed were produced new colors and finer forms, both double and single, so varied and so beautiful, that it is impossible to doubt that when generally known, these new kinds will again elevate the old Canterbury Bell into a foremost place as a border flower. The double forms consist in some cases of two cups, that is one immediately inside the other, and in other cases of a third cup, which by being somewhat cramped in the centre of the others gives to the flower a perfectly double appearance, and one also of considerable solidity. I think these double flowers are likely to prove most useful to cut from in quantity for bunching, as they are produced on the extremity of stems from 3 to 6 inches in length. I have a large bed of these new Canterbury Bells just now in full bloom, and very striking they are ; especially the rosy-pink, mauve, and deep bluish-purple tints. In addition to these there are also pure white blush-lilac, pure peach, and several darker shades ; indeed it would be an easy matter to pick out a score of diverse hues. Bee keepers should grow Canterbury Bells largely ; my flowers of them literally swarm with these industrious little insects from morn till night. Seed of the Canterbury Bell should be sown early in spring, either in a box in a cold frame or house or in the open ground. In all cases it is necessary that they should be got forward early, so that the plants may be as strong as possible for the winter, otherwise they may not bloom the succeeding summer. If the seed be sown as soon as gathered, the plants cannot be got strong enough to bloom the next year, but they will be extra fine for the succeeding summer.—A. D., in *Garden.*

Improved Larkspurs.—The *Gardener's Chronicle* says : "Among hardy perennials there are few more gorgeously beautiful than the perennial Delphiniums. We lately saw some beds of these in Mr. Parker's nursery at Tooting, and also at Messrs. Henderson's, St. John's Woods, and their beauty was really dazzling. They are for the most part hybrids from Delphinium elatum, grandiflorum, and D. formosum, and have been chiefly raised in France. Among the finest that we noted were D. Barlowi versicolor, with pale-blue flowers shaded with a dark-

er tint and studded with yellow hairs; D. formosum, with large azure flowers shaded with indigo; M. le Bihan, with globose double flowers, blue externally, shading off into pinkish violet; Madame Jacotot, with large, soft, blue or amethyst colored double flowers; Coronet, with dwarf habit and deep blue flowers; Prince of Wales, recommended for its robust constitution; Agamemom, with large pale blue flowers; Aimable, Gloire de Saint Mande, La Mastodonte, Ranunculiflorum, a double-flowered variety, with pale violet flowers shading off into pink. M. Thiers is also a good double. Many of these cannot be reproduced from seed, or even if seed be obtained it cannot be depended on to yield the desired variety, hence the necessity of propagating them by parting the roots. They are not particular as to soil and treatment, though some are more fastidious in these matters than others. Their flowering period may be prolonged by cutting off the flower-spikes as they fade.

JAPAN CONIFERS.—I have been induced to make a few notes on this most interesting family of Conifers, in the hope that my doing so may lead to their being more generally planted. The eye never grows tired of a collection of them, presenting as they do an agreeable diversification, which I think can scarcely be seen in any other class of the Fir tribe. Take, for instance, Retinospora pisifera and obtusa. These are fine handsome timber trees, growing from 70 to 100 feet high. The first, I find, grows faster than any other Conifer at this place. The habit of growth is very graceful, somewhat resembling that of the Deodor. It seems to love a moist situation, and on a well-drained bog is quite at home. I have observed that, although as a rule rabbits are particularly fond of this family of Conifers, they seem to care little for this species. R. obtusa is not by a long way so fast a grower, and, although it is represented to be by far the largest tree in its native haunts, it will never, I think, make so large a tree as pisifera in this country. I find pisifera to make an average growth of 3 feet to obtusa's one. The character of obtusa is more that of a bush than of a tree, its graceful pendant branches forming handsome round heads of a light green, tinged with a purplish hue. Nothing can be better for winter decoration of beds, being so hardy and compact in habit. It also bears moving well. R. obtusa nana and its golden variety, aurea, are invaluable for planting in centres of round flower beds or for edging large ones, or forming the second or third row in middle-sized beds in winter. In a word, they are useful plants for many different purposes when from a few inches to 2 feet high. Instead of the ever and again repeated Biota aurea, both in large and villa gardens, let us have, like the Japanese, a goodly number of these Retinosporas, and also of Retinospora pisifera aurea plumosa.

This is a great favorite of mine, and indeed of all who have seen it. It is much hardier than Biota aurea or gracilis; in fact, the whole family of Retinospora is much more so than the Biotas are. Where we cannot get a presentable tree of B. aurea, our eyes may often alight on the fresh, healthy, feathery golden heads of R. pisifera aurea plumosa. I cannot deny the beauty of B. aurea when in a healthy condition; but it must have a dry warm subsoil, and as little rain and frost as possible, to retain its beauty, and then to me it has an air of stiffness that is quite wanting in the Retinosporas. In wet, cold-lying situations, where light-colored trees of this character are wanted, we use only the Retinosporas, including the Biotas *in toto*. There are other Retinosporas with something of the same aspect as pisifera aurea plumosa—pisifera aurea, for instance, a distinct and desirable variety, not quite so golden and more Heath-like in its growth. This and the three other varieties of pisifera are very distinct subjects as dwarf trees. Well may the Japanese so highly esteem them, and grow them so extensively in pots. A handsome plant of R. pisifera aurea plumosa, in a pot, was shown in the excellent collection of Conifers of the Messrs. Barron, at the late Royal Horticultural meeting at Birmingham. I believe most people, like myself, thought it the most striking plant of the whole collection. I was surprised to see but this one out of so many beautiful varieties of Retinospora. We all know a Thuja, a Biota, or a Cupressus as old friends, and see them every day, but in such collections we look more for something with which we are not so familiar.

I will now turn to quite a different type; it is the peculiar and interesting thread-branched Japan Cypress, filifera. I know of no Conifer anything like it in character. It might be well designated the Weeping Retinospora, and is very suitable, I should think, for planting in cemeteries. And how grand for placing in vases or centres of beds! It is like Amarantus salicifolius in its outline when trained to one stem (which it always should be) and well furnished

at the bottom. Placed in a pot or vase, it will throw its curved thread-like branchlets over the sides in the most pleasing manner. I can recommend it with confidence to all who want a weeping tree of a small size. One more species is so distinct from the rest that one can scarcely believe it to be a Retinospora; it is ericoides (the Heath-like Japan Cypress. This assumes during the winter a beautiful tinge of purplish hue on a pale silvery ground, which, with its tiny Heath-like branchlets, presents a charming contrast to the other species. Its growth is rather slow, and conical in character, and it is well adapted for Italian parterres instead of the Irish Yew. Like all the rest it is very hardy, and bears removing well. It is a good pot plant, invaluable for small villa gardens, &c. It is no exception to the rest of the family in doing well on a drained bog; but unfortunately, the rabbits are particularly fond of it—so much so that out of scores planted here not one is left whole. I thoroughly believe, if there are rabbits within a mile of it, they will find it out. Out of their reach, it should be planted largely on rockeries, margins of mixed borders, &c., and in gardens where winter decoration is carried out. Nothing can be propagated with greater ease by cutting under a hand-light in the autumn in a free, sandy soil, with good drainage, the soil pressed firm, with an inch of sand on the surface. Set the cuttings about 2 inches apart, give a good watering, to settle them, and then dry off the surface moisture, and put on the light, which should be allowed to remain, unless dampness make its appearance, when it should be removed for a short time. This, with a little dry sand or charcoal sprinkled on the surface, will arrest the damp at once. Take care that they have little or no sun for some months after being planted. If all goes on well, they will be rooted in the following August. They can then be planted in brick pits, and shaded for a while until they are quite established. When hard weather appears they must be protected by old lights or wooden or straw shutters, always giving light and air when the weather is favorable. After spring they will well be able to take care of themselves without protection, if their other wants are attended to. The trouble of raising the stock at home ought not to prevent their being used largely, the price of plants at the nurseries, too, being within the reach of every one.

There are yet many other varieties deserving a word in this list, which, however, is not meant to be an exhaustive treatise, but merely a rough sketch of a few of the most desirable kinds. I must not, however, omit R. leptoclada (the flat-branched little Cypress), which is interesting indeed—its stiff, rather formal, spiral, dense, flat, purplish, branchlets giving the slow-growing little tree the appearance of having been artificially bronzed. With this and a passing mention of the graceful and Fern-like R. filicoides, I end my remarks.—J. TAYLOR, in *Garden*.

HORTICULTURAL NOTICES.

ANNUAL EXHIBITION OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.

We promised to refer again to the annual meeting of this Society, and in regard to the floral department. There has been a marked increase in the number of exhibitors of cut flowers of late years, and they add much to the interest of the exhibition. Among Dahlias Messrs. Miller & Hayes, Meehan, Dreer, and Gerard Schmidt, were the leading exhibitors. Mr. S. had chiefly his own seedlings, in the raising of which he has a deservedly good reputation. We noted as among the best varieties in the several collections Nero, Mrs. Trotter, Juno, Freemason, Antiope, Fanny, Defiance, Md. Hughes, Butterfly, Prince of Wales, and Sensation. Most of the premiums for cut flowers, including Roses, Verbenas, Petunias, Gladiolus, etc., were obtained by the three first named firms as above.

As with stated cut flowers, so with designs, baskets, wreaths, bouquets, etc. There is a great increase in the number offered over former years; and one can see the progress of taste in arrangement, and in the selection of material better at this exhibition than perhaps elsewhere. Saffrano and Isabella Sprunt Roses, seem the favorite flowers, though the darker rose color ones,

popular elsewhere, are abundantly used. Tuberoses, Catalomin Jasmine, Bouvardias, Carnations, President Degraw and La Purite, Geraniums, both flowers and leaves, with Ferns, Myrsiphyllum, and variegated grasses, seem the most popular flowers. One exhibitor of a wreath had made good use of the young and white flowers of Hydrangea paniculata. The chief exhibitors in this department were John Dick, Thos. Meehan, Graff and Crawford, John Plender, Jennie Scott, John Magee, Hugh Graham, and Craig & Bro.

In plant culture there was not much novelty over former years, nor was there many new species or varieties. A small collection by Wm. Foust was, however, an exception. He had some of the most unexpected things. Among these was the Napoleon flower, Napoleona imperialis—rare even in Europe. The flower is the chief interest of this plant, but it was not in bloom. Another was Paullinia thalictroides, rare also in Europe, and only recently noticed in the *Gardener's Monthly*. It is of a graceful slender habit, and suggestive of a Fern. Another plant, so much like a beautiful Fern, that few recognized it as anything else, was Lomatia elegans. There was a plant of the bean family with *four square* pods, named Psophocarpus tetragonolobus,—other new things of interest were Poinciana regia, Musa zebrina, and a beautiful Caladium named Newmanii, with deep rosy blotches on bright green ground. Mrs. Bissett had a very fine collection of Ferns, in which culture she takes much interest. In Mr. Daniel Curtin's collection we noted the somewhat rare Double Geranium Asa Gray. It is a rosy-salmon. Also had he some pretty plants of a variegated Pompone Chrysanthemum. In a small collection by Hoopes Bro. & Thomas, was Cuphea hyssopifolia, which, for small edgings or light work, will be as popular we think as Cuphea platycentra. Mr. Thomas McKenzie had a full collection of small plants, intended only for the decoration of the room, in which much taste was displayed in the arrangement. The taller and lighter green leaved forms formed the centre, while the two flanks were composed of heavier and variegated plants, such as Echeverias, Agaves, etc.; Mr. Harris' plants consisted of Caladiums, which were well grown. Usually, these are too much drawn up by growers. If points of perfection are decided on, we should insist on stockiness being one of them. Somebody, with only "No. 3" on the card, had a fine collection of succulents, as also had Mr. John Dick. We do not know but Echeveria rosacea was the best of the whole. Gebhard Huster, gardener to J. B. Heyl, Esq., had a collection of chiefly small plants. These do not make so much "display" as those large growing things which require immense tubs to hold them, but we do not know but it is to the interest of good gardening, to encourage these smaller pot-plants by premiums in competition with others like themselves. In the big tub line, Mr. Hugh Graham had an admirable collection. Palms, tree ferns, and similar striking things, made up the list. One Palm, Geonoma Verschafeltii, with leaves of a cabbage-green color, and very striking, we do not remember to have seen before on exhibition. A plant of the "Pineapple" family, Vriesia glazionana, an enormous specimen about three feet high, and as many wide. There are few things in the vegetable kingdom more striking when there is room than a plant of this kind. One especial feature of Mr. Graham's plants is that they are always clean, and in vigorous health. A good Palm that does not require too much room to grow is Phœnix reclinata, of which there was a good plant here; as well as a good specimen of that most noble of all leaf plants, Sphœnogyne latifolia. Mr. Geo. Foust has found the way to grow tricolored leaved Geraniums as strong as others grow the ordinary green leaved form. His plants were all remarkably well grown. Here was an Adiantum cuneatum three feet over, and a Peperomia maculosa two feet. Can any one beat this? Mr. Wm. Joyce, gardener to Mrs. M. W. Baldwin, had his usual selection of good plants. His Anthurium grande was well grown, having eighteen leaves, and some of them eighteen inches long. Mr. Alex. Newett, gardener to H. P. McKean, Esq., had also an excellent collection of pot plants. Few can equal him in growing Ferns properly. Some of his Lycopodiums and Selaginellas were two to three feet over. One of these was the old Selaginella stolonifera, and, as he had it here, was more beautiful than any of the newer ones. S. atrovirens, however, attracted a good deal of attention. In this collection there was one of the best specimens we have seen in bloom for some time of Allamanda grandiflora. There must have been some hundreds of its golden trumpet-shaped flowers. Mr. Balderston had some of his ingeniously framed vases on exhibition, already favorably noticed in these pages.

T. Sinclair & Son, Lith. Engraved expressly for the Gardener's Monthly

Souvenir du Congrès Pear.

COLOR PLATE

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HINTS FOR DECEMBER.

FLOWER GARDEN AND PLEASURE GROUND.

Hints for the month, in the garden sense, has nothing to do with the month in the calendar sense; and though our heading says "December," the month we mean is the month, or months it may be in the far North, before active work in the garden begins. Here in Philadelphia we really have two months; in the South perhaps but one, and in Canada three; but we always try to keep these things in mind in what we say in this column. There is not much to be done anywhere yet in the flower garden. There are some things, however, that should be done, and for which preparations should be made now, that are not often done, but are very essential to a well-kept place, particularly the *thinning out of trees and shrubbery*, and the *preparing of composts* for plants and flowers. The great fault in most places is the neglect of timely thinning out. We cannot call to mind one place that is exempt entirely from this criticism. Grounds have to be planted thickly when they are first formed, to avoid a hungry and neglected appearance. Cheap and common trees may be interspersed with more valuable ones, and when the place is pretty well overgrown, have these indifferent trees taken out. But most places have been thickly planted without any view to ulterior fitness; still, the least desirable should be taken away. One fat, luxuriant, robust tree, perfect in shape from collar to the apex, will give more real pleasure than a clump of a dozen half-starved specimens, struggling with each other for a mere existence.

We often wonder why people always have single trees, and straight trees, and trees branched regularly all around on every side, and nothing else. In the wild woods here and there is a double tree or a triple tree, or a tree inclined in some particular direction. These variations would soon tire, if they were to become universal,—much sooner than the regular forms, which, perhaps, never tire in themselves; but if the leaning tower of Pisa is worth looking at, surely is a leaning tree. To our mind variety is a great charm on a well ordered place, and these abberations from what we see every day, if not monstrous, are worthy of praise.

Soil for flowers may also be looked up during the winter season. Very few understand that an occasional change of soil is very beneficial to flowers in beds, though all know how important it is to flowers in pots. There is nothing better than surface-soil from an old pasture, taken off about two inches deep, and thrown into a heap with about one-sixth part of old hotbed dung, to partially decay. In addition to this "staple" item, smaller quantity of different matters should be gathered together for peculiar cases, or particular plants. Peat, for instance, will be found very useful for many kinds of plants. This is not, as is often supposed, mere black sand, but a spongy, fibrous substance from the surface of bogs and boggy wastes. Sand should be collected sharp and clean; the washings from turnpike ditches are as good as any thing. Leaf-mould is best got already well decayed from the woods. That which one makes for himself from rotten leaves is seldom good for any thing; it is always sour, and seems "indigestible" to vegetation. A load or so of well-decayed cow-manure is a good

thing for the gardener to have by him, as all those plants that dislike our hot summers, and want a cool soil to grow in, prefer it to any other manure. A small pile of hotbed manure is almost indispensable to a garden.

Many kinds of trees that do not seem to thrive well, will be greatly improved next year by having a surface-dressing of manure, or rich soil thrown about them. Evergreens are no exception. A singular notion used to prevail, that manure of any kind was injurious to evergreens, probably through noticing that they were usually found in poor, barren soil. Our best American Coniferæ-growers, however, have long practised manuring them, and with the best results. Guano has been found particularly beneficial to the Spruce family, and it will probably be found as good for the whole family of evergreens. Unfermented manure, as we recently stated, is unfit for the purpose.

In looking up compost, remember that much will, in many places, be required for dressing of the lawn, which too often is really starved for want of nutriment. The modern practice of using mowers, and leaving the short grass to serve as a mulch is a little good ; but not near enough to keep the grass in good heart. A top dressing every other year, or every three years, will be of great benefit to the best made lawn. This top dressing may not be of rich or expensive materials. The scouring of ditches will do. Indeed this kind of material is the better, as more of it can be used ; and thus shallow places, which often exist in lawns of some pretentions, may be filled up. We have seen good lawns made in this way from rough places, as bad as if the grass had been sown on a piece of ploughed ground, without any rolling or harrowing down. The grass sown comes through the filled up places, and a smooth lawn in this way can often be had without the trouble and annoyance of ploughing up and seeding down again, a practice which is often employed where the work was not in the first instance well done.

HOUSE GARDENING.

At this season the Calla will be growing vigorously, and will need water more abundantly. A saucer of water under the Calla is much relished by this plant. It is sub-aquatic in its nature. Other plants have saucers under them in order to keep the water from dripping on the floor ; but water should not be allowed to stand in them. The Calla flower is liable to the attacks of green fly, as indeed are many plants which grow in windows. There are many remedies which gardeners use in greenhouses that are inapplicable in rooms. The best thing for the room gardener is to take the pots to a back kitchen, or, if not frosty, to the open air, lay the pots on their sides, and syringe with warm soapsuds.

Basket plants often suffer from too much or too little water. If from too little the leaves curl or fall, and the plants have a dried up appearance. If too much, they get yellow and drop off. As a rule, a basket in a warm room should be taken down once a week, and soaked in a bucket of water, then drained and hung up again. Every day during the rest of the week a little water may be given the plants, and something put under to catch the drip. Some baskets have no provision for the escape of moisture. These are dangerous. Still some people manage to watch closely, and do well with them. Fern cases do best when given a little sun ; for, though Ferns are supposed to grow naturally in shady spots, it is because there is generally a more humid atmosphere there. If they can get this moisture, they rather like light.

VEGETABLE GARDEN.

Very little can be done now in this department, except by way of preparation for another year.

Manure can be placed on the ground wherever required, and Asparagus beds, if not already done, should have a slight covering of it. Bean-poles, Pea-brush, and stakes of all kinds should be got now, the tool house gone over and put in order, and everything kept in good order and studiously in its place. When the season of operation commences, there will then be nothing to hold back the attention.

Where there can be a heat of 60° commanded, Bush-beans can be easily grown in pots, and can be gathered in two months from the time of sowing.

If there is abundance of leaves or manure at command, and small frames, beds may be put up for early spring salads at the end of the month.

Radishes and Lettuce, are, however, very impatient of too much heat ; they will come on well if the temperature be kept at 45°. When it goes above that, the sashes should be lifted entirely off.

COMMUNICATIONS.

NOTES OF A SUMMER'S TOUR.

BY WILLIAM SUTHERLAND, PHILADA.

On arriving at Jersey City, I paid a visit to the greenhouse and nursery of Peter Henderson, at Bergen. I found Mr. Henderson away from home, and perhaps on that account did not receive the same facilities to examine the place that I might otherwise have obtained.

What strikes the visitor most is the neat arrangement of his greenhouses. The plant houses are arranged for the most part in threes, running north and south, with a large shed for storage, packing, etc., at the north end, and a broad roadway at the south end. These are all span-roofed, probably covering over two acres. The houses for the growth of cut flowers are what is known as half span. These run east and west, with a division from the angle of the roof; the north side being used as a propagating house, while the south side is for forcing Roses, Bouvardias, Heliotropes, and other winter blooming plants for cut flowers.

At the time of my visit, there had been no rain for three months, and despite the dry weather, the Geraniums were one sheet of bloom : double, single, variegated and bronze varieties, seemed to rival each other in the profusion of flowers. Here there was almost every conceivable shade of red, white and pink Geraniums, arranged in small, square beds, with about two dozen plants to each bed, making one of the grandest sights I have ever seen. Prominent among them was a Double Pink called Admiration, which was very fine. The double white Alba pleno was also very good. I noticed a fine single white one called Snowflake, also a fine single pink known as Rustic Beauty ; while among the red and scarlet there seemed no end of shades. In the variegated varieties I noticed none to beat the Mountain of Snow and Bronze Queen. The soil appeared to be of a rather stiff nature, but seemed eminently suited to the growth of Geraniums.

I noticed a very dwarf Heliotrope called the Star, which was the darkest I have ever seen. The Roses, in spite of the dry season, looked very well, and were quite thick with buds and blossoms. The Verbenas, which had been very fine, were cut back for the purpose of getting young wood for propagation; and in order to stimulate the Verbenas into a healthy growth, it is the practice of Mr. Henderson to cut back his stock plants about the end of August, and fork in some well-rotted cow-manure, mixed with new soil. Starting with healthy cuttings is half the battle against Verbena disease. The grounds and houses presented a very neat and clean appearance ; hardly a weed or dead leaf was to be seen.

I next called on Mr. John White, who was formerly foreman for Peter Henderson. I found he had several greenhouses devoted to the growth of plants for cut flowers. One house was filled with the double white Primrose, which Mr. White considers one of the most valuable winter flowering plants that we have.

As there seems to be some difficulty in the growth of this plant, I asked Mr. White for his system, which we give below for the benefit of the readers of the *Monthly :*

When the plant is done flowering, or rather when the flowers are too small to be used to advantage (which is towards the beginning of summer), they are placed in a cool, shaded house, carefully cleaned of all dead leaves and flowerstalks, and kept this way until about the first of August, when the pots are carefully covered with sphagnum moss, slightly heaping it in the middle, so as to cover all of the bare stems. This moss is never allowed to become dry, but is kept as near as possible at a uniform moisture. About the beginning of September it will be found that the plants have formed fine thread-like roots all round the stem. They may now be divided, and potted into small pots in fine sifted soil, composed one-half peat, one-fourth well rotted cow-manure, and one-fourth sand. The house should be kept rather close for a few days, until they begin to grow, when they should be shifted as they require. [This refers to the Double *Chinese* Primrose.—Ed. G. M.]

Another house was devoted to Roses for winter blooming, consisting of the following varieties: Marshall Niel, Bon Silene, Lamarque, Safrano, Isabella Sprunt and Solfaterre. The rest of his houses were devoted to mixed bedding, basket and winter blooming plants.

Mr. White's Geraniums and Dahlias were not

generally good, owing to dry weather, and the lightness of the soil; but prominent among the Bronze Geraniums I noticed one called Marshall McMahon, which kept its color far ahead of any of the others. The Verbenas were very fine; and judging from some seedlings he showed me, his collection must be second to none. Mr. W. called my attention to some very fine Perennial Phlox. One shaded pink variety called Souvenir de Salzmatt, had been in bloom some three months. Another variety, a seedling, had the largest head of white flowers I ever saw, called White's White, as named by Dr. Thurber of the *American Agriculturist*. I noticed a very fine bed of Hydrangea paniculata grandiflora in full bloom, forming innumerable white pyramids, which had a charming appearance. I also noticed a new yellow Achyranthus called Cassii, which was very beautiful, as were some striped and edged Cannas; a variety of trailing Vinca, with a golden spot in the centre of the leaf called japonica; also a row of Glaucium corniculatum, looking not unlike gigantic white thistles in the leaf, but bearing a bright yellow bell-shaped blossom.

In New York the yards of St. Paul's and Trinity Churches, by a little judicious management, had been converted into perfect fairy spots. Here, instead of hauling away the bones of their ancestors, and selling the ground for building lots, as is too often the case in our large cities, the grave mounds had been carefully graded down, and flower beds had been made between the stones and monuments. These beds were very neatly planted with a fine selection of flowering and foliage plants, Sedums, etc, while between them were some fine specimens of Palms, Aloes, Dracænas, Pandanus, Amaranthus, Abutilons, Oleanders, Agapanthus, standard Lantanas and Fuchsias, besides numerous clumps of Cannas, Calocasias and Sages. Along the banks where it was very dry, the English Ivy had been planted, and double and single Portulacca sown. Both plants were in a very flourishing condition, the bright flowers of the Portulacca contrasting with the dark leaves of the Ivy, produced a very pretty effect. I afterwards learned that a gardener was employed to look after both Church yards; and judging from the appearance of the plants he must be kept pretty busy.

Around the fountain, at the foot of Broadway, there had been a ring of Calocasias planted, alternated with dark leaved Cannas, which looked very neat, and the water resting on the broad leaves of the plants seem to afford drinking accommodations for the thirsty little sparrows in the neighborhood. In the suburbs of Brooklyn I noticed that Rhododendrons were planted very extensively, and the formation of natural archways over the entrances and walks, seemed quite the rage.

On arriving at Mr. William Bennett's, at Flatbush, I found that gentleman very busy painting, glazing, and getting ready for winter. After explaining the object of my visit, I was shown through his establishment. I found that two of his houses—probably 100 feet long by 12 feet wide—were filled entirely with nice little specimen plants (2 and 3 feet high) of Dracæna tricolor, which is a great window plant here. Between the rows of pots slaked lime had been strewed, in order to keep down the snails, which Mr. Bennett found to be very troublesome. Mr. B. informed me he had tried salt, and various other remedies for this pest, but found none so efficacious or so harmless to the plants as slaked lime. Another house was devoted to Pandanus utilis. Here they were all sizes. This is another excellent window plant, and much sought after in winter. One house was set apart for the growth of Smilax (*Myrsiphyllum asparagoides*), which was planted out in beds, and trained on numerous strings. The roof of the house was covered with Passiflora princeps, which, at the time of my visit, literally hung in ropes of scarlet flowers and buds. Two large houses were devoted to Roses, which were planted out, consisting principally of Lamarque, Bon Silene, and Marshall Neil. Of the latter variety I noticed a specimen of gigantic proportions, covering some 300 square feet. In another house the large Camelias were planted out, and the smaller ones stood round them. Mr. Bennett informed me that the Camelia did not flower very freely for some years after being planted out. Another house was filled with Palms, Crotons, and other stove plants. I also noticed some magnificent specimens of Adiantum Farleyense and Dicksonia antarctica. I was shown a very fine collection of Aloes, Houseleeks, and other succulents, which seem to be the fashionable plants now. On the outside of the dwelling house I noticed a very fine specimen of Allamanda Schottii, which covered half of the piazza. In the nursery grounds were some fine beds of Roses, Carnations & Tuberoses, which, although suffering for want of rain, looked very promising.

It was my intention, on starting out, to visit the Messrs. Parsons, Isaac Buchanan, William Wilson, Olm Bro., etc., but my traveling companion being indisposed, and our time limited, I was glad to set my face homeward, taking South Amboy in my course, the particulars of which I will give in another paper.

OUR HORTICULTURAL LITERATURE.

BY AN OLD OBSERVER.

Mr. Editor, did you ever attempt to climb a ladder, and, just as you had reached the topmost round, have it knocked from under you, and you left sprawling on the ground? Well, I never did, but I can readily imagine the sensations of one who has had the experience. Something of this sensation I felt as I read the following in a late number of the "*Garden*," an English journal which you, probably, well know:

"An *American Garden* (monthly) has been started in Brooklyn. It is edited by Mr. Hogg, a well known horticulturist of English descent." He remarks in the first number that, "unfortunately for the art of gardening in America, the journals are, for the most part, filled with extracts from foreign papers. The practices therein recommended, owing to differences of climate and other reasons, are not adapted to our necessities, and can only be made useful by the valuable hints and suggestions which they carry to persons of otherwise large experience. On the other hand the articles of home production are generally the work of persons whose reading and practice have been too limited to afford the qualifications needful for giving instruction. Hence, too often they contain that which is empirical and exploded in practice, and, not unfrequently lead those who adopt these suggestions to grievous disappointment. There are, in all the country, but four periodicals which are exclusively devoted to horticultural and floral objects, and two of these confine their attention merely to the interests of professional men, and have but little circulation in the larger circle of amateurs."

"We do not acknowledge," says the editor of the *Garden*, "the force of these observations in full, as much of the horticultural and rural literature of America is remarkable for complete knowledge of the subject, lucidity and point in expressing that knowledge, and not unfrequently for an abundance of excellent illustrations, which make the writer's meaning on every point clear at a glance."

Now I had all along thought that your journal was not wholly made up of "extracts from foreign papers." What the other three journals are, neither am I well informed. Certainly Mr. Downing did not fill the *Horticulturist* with "extracts," nor Mr. Hovey his valuable *Magazine of Horticulture*. I venture to assert, that of the 34 volumes of 500 pages each, not fifty pages of each volume, were extracts from foreign papers. What there was, however, was the cream of all the foreign journals in the English and French language. Mr. Robinson, the editor of the *Garden*, administers a just rebuke to the egotism, ignorance and conceit of his namesake, with the cognomen of "America" added.

But who is this second Daniel? Who says all this, and then adds, with the apparent wisdom of a Solomon, that the articles in your journal are "generally the work of persons whose reading and practices have been too limited to afford the qualifications needful for giving instruction!" I once knew an old cultivator of New York by the name of Thos. Hogg, a gardener of the old school, intelligent and honored, and a real lover of horticulture. But who this Mr. Hogg of English descent is, I don't know. Where has he lived, that his light has been hidden so long, and learned so much that he alone can have acquired all the knowledge necessary to teach the American people in horticulture? Is he a nurseryman or an amateur, or both? I guess neither. But perhaps you know all about it. Really, our old friend Peter Henderson, Mr. Hoopes, Mr. Fuller, and some other authors and editors, will find their occupation "clean gone," writing for journals which have but "little circulation in the larger circle of amateurs." They had better turn their attention to attaining the "qualifications needful for giving instruction," and no longer lead those who follow them down to "grievous disappointment."

But enough of this. Your space is too valuable to be wasted in comments upon such trash as that quoted above. The same room devoted to an article on the culture of a mammoth squash, would be better; but for the credit of what we—that is you and I—think has been accomplished by American horticultural journals, it seemed that so consummate a tissue of bombast should find some recognition, not for its importance, but rather as an apology to our transatlantic friends, for the misrepresentation of American horticultural literature.

CONIFERÆ IN POTS.

BY MANSFIELD MILTON, NORTH EASTON, MASSACHUSETTS.

Such varieties which are not hardy enough to withstand the severity of our winters of Thujas, Retinospora, Araucaria, Cryptomeria, and other Coniferæ, look remarkably well when grown in pots, and set out for the decoration of the pleasure ground during summer, while in winter they may be stored in a suitable cellar. Nothing looks more beautiful than a good collection of the finer varieties grown in pots for hall decoration. This was well exemplified with a handsome collection exhibited by H. H. Hunnewell of Wellesley, at the annual exhibition of the Massachusetts Horticultural Society. It was undoubtedly the most attractive collection in the hall. The specimens were in excellent health, and, although small, most of them in a marked degree showed their characteristic beauty. Most conspicuous in the collection were the following species and varieties:

Thuja plicata.—An Arborvitæ found in Mexico and the western shores of North America, growing to the height of 20 or 30 feet, of a branching and spreading habit.

A nice plant of Thuja Tom Thumb, a very compact variety. But the most beautiful Thuja in the collection was one named *T. Zuccariana*, of fastigiate habit, making in a young state a good plant for pot culture.

The Retinospora family was well represented. This class of plants is indigenous to Japan. It belongs to the Cupressineæ division of Coniferæ. By some botanists this class is looked on as being closely connected to the genus *Chamæcyparis* of North America, and several of the species are found classed in both genera by different persons. When planted out of doors, as seen in some parts of England, the Retinosporas make very ornamental objects, but with us they have to be grown in pots or tubs, or planted out in summer, and lifted and kept in a cellar during winter. With the exception of *R. obtusa*, which grows to a tree over 80 feet in height, they are mostly small-growing trees or shrubs. The Japanese name for this species is Hinoke, meaning Tree of the Sun. There are a good many varieties of it, the variety *gracilis* being in Mr. Hunnewell's collection, also *R. plumosa aurea*. *R. Lycopodioides*, *R pisifera nana aurea variegata*, the very pretty *R. decussata*, *R. Filicoides*, *R. lætevirens*, and several others of this handsome genus. A very good plant of *Cephalotasus drupaceas*, a genus of plants very like the Yews (Taxus). A native of Japan. Of the singular looking *Sciadopitys verticillata* there was a good plant. It belongs to Japan, being found in large quantities around the Japanese temples. A variety of another Japanese tree was in the collection—*Thujopsis dolabrata variegata*—which belongs to the Cupressineæ section of Coniferæ. And beloning to the same section there was a variety of the only species in the genus—the variety *elegans* of *Cryptomeria japonica*. There are a good many varieties of this species—some of them very distinct. There was a small plant of *Araucaria imbricata*. This is the Chilian pine, which grows in its native habitat to a large and magnificent tree. I have seen some very fine specimens in different localities throughout the British Isles; but the best group of it I have seen is at Craigo, near Montrose, Scotland, where several acres are planted with it exclusively, and most of the plants growing vigorously. The Norfolk Island pine, *A. excelsa*, and the Moreton Bay pine, *A. Cunninghamii*, were both represented with nice healthy plants. There was also a plant of *Biota elegantissima*, and one of Duchesse d'Orleans juniper; but prominent in the background of the collection was a tall plant of *Taxus fastigiata* or Irish Yew. When this vareity of Yew stands unprotected during winter, and planted in a favorable situation, it forms a very pretty compact and ornamental tree; well adapted for planting as an individual specimen, or in lines on each side of an avenue. The finest line of this tree I have seen was at a place in the south of Scotland, where it formed a line alongside a broad walk which traversed the pleasure grounds.

There were a great many more species and varieties in Mr. Hunnewell's collection too numerous to take up your space in recording, although well worthy of cultivation. This gentleman has done more than any other in this State—in fact I expect more than many in the country—in introducing the finer varities of Coniferæ into this country,—not only the more tender kinds, but also the hardier sorts.

There are a great many gentlemen throughout the country possessing a great admiration for, and knowledge of horticulture, having large estates suitable for the cultivation of ornamental trees, but who apparently do not appreciate the lasting beauty of some of the rarer evergreens. Among deciduous trees are found some of the finest of ornamental trees; but when once denuded of their leaves in fall, but little beauty or shelter do they afford. The evergreens such as Pines, Piceas, etc., not only retain their beauty throughout the year, but they, when judiciously planted, form an excellent shelter against the piercing zero winds. It is true there are a great many good sorts which are too tender to endure the severe winters in the Northern States, but at the same time there are a good many sorts seldom seen of great beauty and hardiness, which ought to be found in cultivation.

A WINTER GARDEN AT CHARLOTTENBURG, BERLIN, PRUSSIA.

BY. F. W. P.

The recently completed Winter Garden has been open to the public, and received with joy and hearty greeting by thousands of the better class of people. The description we saw in "*Over Land and Sea*," a German illustrated paper, shows that the principles upon which such buildings should be constructed, begin to be better understood than heretofore. Some friends of mine, who had seen the paper, thought the architects must have read and used my articles on winter gardens and conservatories, published in the *Gardener's Monthly*, for the features especially mentioned by the writer, are just those upon which I had laid the greatest stress.

After describing the Park, laid out by a gardener, and not as is the fashion here, by an engineer, or a whole squad of them, he continues: In the midst of these beautiful grounds rises from a terraced elevation the Palace of Flora, covering, with the glass structure, an area not less than 3½ acres. The centre of the hall is the largest concert saloon of Berlin, 66 feet high, 66 feet wide, and 135 feet long; added to this the open corridors surrounding it, the available room for the audience is increased to 89 feet in width, by 158 feet in length. Above these corridors are arched balconies with the box for the Royal family, and the stand for the orchestra. On the eastern side of the hall a partition of plate glass, 22½ feet wide, and 42 feet high, furnishes a splendid view over a tropical scenery, in which are noticed eight large Palms, costing $8000, two of which have a historical interest since they were imported from Abyssinia by Alexander von Humboldt. Six large glass doors open upon a terrace extending over the whole width of the Winter Garden, which crosses an area of not less than 24,759 square feet, not a pillar, prop or bracket, interrupting the view over the whole extent. All ornamentations of the parts of the construction have studiously been avoided, being deemed out of place, and only interfering where a tropical world spreads a natural beauty all over the vast space.

Neither Paris, London, Vienna, nor any other large city, possesses anything that could be compared to this Palace of the Fairies, the Palm Gardens of Frankfort, a M., not excepted.

The founders of this wonderful institution are a society of *real* amateurs of horticulture, and friends of the people, who have created something truly beautiful, the technical and artistical execution of which, does great honor to both the gardeners and the architects employed. When will we have something similar in America?

ARRANGEMENT OF FLOWER-BEDS.

BY WILLIAM SUTHERLAND, PHILADELPHIA.

The planting of flower-beds and borders has of late years attracted a great deal of attention; there has been a number of pros and cons on the subject, of how to produce the best display.

Some have advocated the planting of colored leaf plants only, while others equally enthusiastic would have nothing but flowering plants.

But in my humble judgment a proper combination of both kinds produces the best effect. What is more effective than a bed of Scarlet Geraniums, edged with some colored leaf plant, or a bed of Scarlet Sage, ringed with White Sage and edged with Alternanthera.

There is really quite as much art in taking care of the beds after they have been planted, as there is in planting, and here let us remark, that unless the beds or borders are going to be looked after when they are planted there had better be no extra pains taken in setting out the various lines or clumps of plants, as they soon get one confused mass. This applies especially to colored leaf plants. Coleus, Achyranthus, Centaurea, &c., all want the tops taken out very frequently while the Alternanthera, when used as an edging, requires to be clipped with the shears pretty often to keep it within bounds.

The best flower beds that I have seen this season, were at Girard College. I have known this Institution and grounds some fifteen or twenty years, and never saw the place look as well, which is saying a good deal for the abilities of the present gardener, Mr. George Huster, who certainly displays great taste in the arrangement

of the flower garden. Thinking some of your readers might gain a few hints by knowing how these beds were arranged and planted, I give you a few notes below.

The flower garden of which I am about to speak, extends from the gates up to the front of the main building of the College, covering a plot of ground nearly two acres in extent, the curving of the carriage drive forming it somewhat into a crescent shape, with a walk through the centre. Just within the gates on either side of the straight walk leading to the main building, are beds about 150 feet long by 6 feet in width, planted in seven distinct lines, beginning with a front edge of Alternanthera versicolor, next a line of Centaurea candidissima, next the golden Coleus Queen Victoria, next a line of Coleus Verschaffeltii, which forms the centre line, then a line of Coleus Golden Beauty, next a line of Achyranthus Lindenii, and lastly a line of Alternanthera amabile with a fine specimen of Dracœna tricolor at all four ends. These long beds add lustre to the garden, but the glory of all are two star shaped and four circular beds. The star beds are slightly raised, and filled with a fine specimen of the Pampas grass, (Gynerium argenteum), in the middle, with Geranium General Grant around it, and Centaurea gymnocarpa on the edge. Two of the circles are planted with a standard Abutilon Thompsonii in the middle, General Grant Geranium around it with an edging of the Golden Feverfew. The other two circles are planted with General Grant Gernaium in the middle, ringed with Washington Geranium, edged with variegated Geranium, Brilliant and Mountain of Snow.

The other flower-beds consist of large and small ovals, squares and geometrical figures, planted as follows: Some with Tuberoses and Roses, ringed with Stockgillys; and Cocks-combs ringed with Rose Geranium and edged with Cuphea Platycentra. Another was filled with Double Petunia, Belle of Baltimore, edged with variegated Ageratum. Others were filled with Abutilons in the middle, ringed with double geranium Gloric de Nancy, ringed with double geranium Mad. Lemoine plunged in pots, (which Mr. Huster finds blooms more freely than when planted out) edged with gold and silver variegated Geranium. Other beds were planted with Tritomas, single and double Tuberoses, Gladiolus and Carnations, edged with Centaurea and Artemisia, with fine standard Lemon Verbenas (Aloysia citriodora) in the middle; several beds of Phlox Drummondii and Verbenas, with standard Lantanas in the middle, also several beds of Echeveria metalica, ringed with Echeveria secunda, ringed with Echeveria secunda glauca, and edged with Sempervivum Californicum, which had a very pretty effect. Two beds were planted with Tea Roses, ringed with Nierembergia and Phlox, and edged with Peristrophe augustifolia aurea.

One large oval bed was planted in the middle with Colocasia esculenta and Javanica, ringed around with some twenty varieties of Caladiums, with an edging of variegated leafed Begonias Rex, Mad. Wagner, picta Grandis, Grace Fahnestock, Philadelphia and others. There must have been at least 200 plants in this bed, and what surprised me most, had little or no shade. Another fine bed was planted with Heliotropes, edged with variegated Argeratum; another with Hybrid Perpetual Roses and Tuberoses in the middle, ringed with variegated Rose Geranium, Lady Plymouth edged with Cuphea platycentra. There was also two lines of Fountain Plants, (Amaranthus salicifolius) and between the flower beds were some fine specimens of Musas, Cannas, Agaves and Palms, also some standard Sages, Lantanas, Abutilons, Hibiscus, Coccolobas, Erythrinas, and Ficuses, the whole making one of the grandest displays I ever saw.

NOTES ON HARDY PERENNIALS.

BY FRANCIS PARKMAN, JAMAICA PLAINS, MASS.

THE FUNKIA (*Broad-leaved Day Lily*)

At the head of this family stands the large white fragrant Day Lily, called *F. Japonica*, *F. cordata*, *F. subcordata*, or *F. alba*; for it appears on catalogues by all these names. It blooms in August and September, and forms when in flower one of the finest ornaments of the garden. Even when not in flower, its broad light green leaves, overlapping each other and forming a verdant tuft, sometimes two feet or more wide, have a beauty of their own. A large plant will send up six, eight or even twelve flower-stems, each with its cluster of buds opening in succession, day after day, their long trumpet-shaped flower of pure transparent white. The white Day Lily is perfectly hardy in most places, but a covering of leaves or litter in winter may not be amiss in damp soils.

The next Funkia is totally different. It commonly appears on European catalogues as *F. cucullata variegata*, but to American nurserymen it is usually known simply as the variegated Day Lily. As, however, there are many variegated Day Lilies, the purchaser should be careful to get the right one. The sort in question is very beautiful in spring and early summer from the coloring of its leaves, which are marbled with the purest white contrasted with a bright clear green. In the hot sun this coloring fades in midsummer, but if the plant is in a shady place, the leaves retain their variegation till Autumn. The flowers appear in June and July; they are of a light purplish blue, borne on a spike about eighteen inches high.

F. cærulea or *F. ovata* is a strong growing kind, forming, like all the family, a handsome tuft of foliage, which, in this case is of a deep green. The flowers are dark blue, on a spike about two feet high.

F. Sieboldii is of smaller growth with purplish or lilac flowers. *F. lanceolata* has narrower leaves. which, when the plant is two or three years old, form a circular tuft of remarkable beauty. The flowers are of a light blue.

F. glauca has very large leaves of a whitish green; a fine object for the borders of shrubbery, Purplish flowers. *F. Fortunii* is recently introduced. It has stiff glaucous leaves, very distinct from other species; but I have not tried it long enough to judge of its merits.

The following have variegated leaves. *F. ovata mediis-picta;* leaves marbled with yellow. *F. lanceolata marginata;* leaves edged with white. *F. cucullata marginata;* leaves also edged with white. *F. univittata;* leaves marked with a white band down the middle.

Excepting always the white fragrant kind, *F. japonica*, the Funkias are chiefly remarkable for the beauty of their foliage, though they all are pretty in bloom. Moderate shade suits them best, and a soil with a good share of rotted leaves or some other form of vegetable mould. They will grow, however, anywhere. Ten or twelve sorts are thriving here in common garden soil.

THE HEMOROCALLIS (*Narrow-leaved Day Lily.*)

The flowers of this division of the Day Lilies are all of some shade of yellow, orange, or copper-color. The well known copper Day Lily, *H. fulva*, is an old and familiar garden flower, and answers well enough to decorate remote and waste places. *H. flava* deserves more praise. It is smaller and more delicate. The flowers are of a bright, clear yellow, and it is well worthy of a place in the border. *H. graminea* is of a more slender growth, but extremely hardy and very pretty. The flowers are yellow, like the last named; and they appear in common with those of all the Hemerocallis. *H. Dumortieri* is orange shaded with brown on the outside of the petals.

From Japan comes a fine variety bearing the formidable name of *H. kwanso flore pleno foliis variegatis*. The flower is of a copper-color, perfectly double, and very large. The leaves are regularly striped with white, and the plant, in or out of bloom, is very effective. It has stood several winters here unharmed. There is a variety of it without the variegation. This last is scarcely distinguishable from the double variety of *H. fulva*, which is striking and effective, and unlike the single sort, has not lost caste by making itself too common.

THE PLANT PATENT.

BY JACOB MOORE.

The protection conferred by the patent and copyright laws, is merely the legal recognition of the right of property of authors in their ideas, and of inventors in their inventions. The equity and justice of such protection must be conceded by every one, for without it, they would be despoiled of the pecuniary results of their labors by publishers and manufacturers. The originator of a valuable plant is entitled to the protection of the government for the same reasons. The peculiarity of the variety. as the various qualities which render it valuable, owe their origin to him and are precisely as much his property, as the ideas of the author, or the device of the inventor are theirs. The one kind of property is no more intangible than the other. The present system of non-protection enables others to appropriate the benefit of the variety without compensating the originator, thus depriving him of all opportunity to obtain compensation. The plant author, so far as remuneration is concerned, is precisely in the condition that the literary author would be without the protection of copyright. The latter in such case, would receive only the sum for which he could sell his manuscript or the first issue of the work. The former receives only the amount for which he can sell the original plant, or those first propagated from it. The protection of the plant author, therefore, as well as the literary author, is a necessity; and the following articles are designed to supply, in part, the deficiencies of a bill introduced in the Legislature last winter for this

purpose, and from which the quoted portion annexed is an extract. The central idea in the scheme of protection here proposed, is to give the owner of a new variety the exclusive right to sell the plants to other parties for the purpose of planting them, and to make the right of the purchaser to grow the said plants saleable, or transferable only with the estate on which they would be situated. "Be it enacted," &c., is purposely omitted.

Section 1. The originator or discoverer of a new variety of tree, shrub, perennial vine or plant of perennial nature, valued for its fruit or seed, or for its flower or ornamental appearance, shall have the exclusive right to grow the variety, and sell and disseminate the plants, cuttings, scions, buds, roots, layers, bulbs, thereof, to be grown, for the term of twenty-eight years.

Section 2. The originator or discoverer of a new variety of perennial vegetable, the leaves or stalks of which are the edible and marketable product, and which is propagated from the roots, shall have the exclusive right to grow the variety, and sell and disseminate the roots for the term of twenty-eight years. And if the variety is propagated from the seed also, the said owner shall have the exclusive right to grow the plant, and sell and disseminate both the roots and the seed for the same term. And if the roots are the edible and marketable product of a new variety of perennial vegetable, and it is reproduced from the seed also, the originator or discoverer thereof, shall have the exclusive right to grow the variety, and sell and disseminate the seed for the same term.

Section 3. The originator or discoverer of a new variety of perennial plant of herbaceous nature, valued chiefly for its flower, or ornamental appearance, and propagated from the roots and seed, shall have the exclusive right to grow the variety, and sell and disseminate the roots and the seed for a term of twenty-eight years.

Section 4. The originator or discoverer of a new variety of annual, or biennial vegetable which is an edible and marketable product, shall have the exclusive right to grow the variety, and sell and disseminate the seed for the term of twenty-eight years.

Section 5. The originator or discoverer of a new variety of annual biennial plant, valued for its flower or ornamental appearance, shall have the exclusive right to grow the variety, and sell and disseminate the plants and the seed for the term of twenty-eight years.

Section 6. The originator or discoverer of a new annual variety of vegetable fruit, shall have the exclusive right to grow the variety, and sell the plants for transplanting, and sell and disseminate the seed in lots and packages, apart from the product which contains it, for the term of twenty-eight years.

Section 7. The originator or discoverer of a new variety of cereal, edible tuber, or an annual plant, the seed of which is the edible and marketable pruduct, shall have the exclusive right to grow the variety for the term of twenty-eight years, unless that right is purchased on the following conditions, when the variety is publicly sold and disseminated during the said term, viz: purchase of the variety of the owner of the protective right for the purpose of growing it, or the payment of one dollar therefor to the said owner, previous to growing the variety.

Section 8. Every protective letter conferred for a variety, shall contain a statement of its name or title and chief value, and specify the marketable product or part of the plant, the purchaser can lawfully sell. It shall also contain a description of the variety, and a grant of the exclusive right to grow and sell it or collect the royalty thereon, according to the manner in which it is protected, and its classification in this statute to the party entitled, his heirs and assigns for the term authorized by law.

Section 9. That protective letters to secure such right shall be issued in the name of the President of the United States, under the seal of the Agriculture office, and shall be signed by the Secretary of the interior, and countersigned by the Commissioner of Agriculture, and they shall be recorded, together with the description of the protected plant, in said office, in books to be kept for that purpose.

Section 10. That before any person shall receive a protective letter under this statute, he shall make application therefor in writing to the Commissioner of Agriculture, and shall file in the said office of said Commissioner a written statement of all the facts in relation to the time, place, and circumstances of the discovery of such plant, or the time, place, and manner of originating it, and describing the plant and the peculiar characteristics and qualities of the same. He shall also furnish to said Commissioner, at or before the of making such application, three living specimens of the plant for planting and growth in the public grounds, under the direction of said Commissioner.

Section 11. That the applicant shall make oath or affirmation that he verily believes the facts set forth in said statement to be true, and that he does not know or believe that the described plant was ever before cultivated or known.

Section 12 That on the filing of such application and statement, the Commissioner of Agricultural shall cause an investigation to be made into the correctness of said statement; and if, on such examination, it shall appear that the plant is new and useful, and that the applicant is justly entitled to protection under the law, the Commissioner shall issue a protective letter therefor.

Section 13. No person shall be entitled to a protective letter under this statute, for any variety which is not new, distinct and valuable.

Section 14. The right to grow a protected variety, shall be saleable or transferable with the real estate, of which the said variety is an adjunct or appurtenance, but not otherwise, except by the owner of the protective right.

Section 15. Every sale of the right to grow a protected variety, shall convey to the purchaser the right to sell the lawfully saleable product, although such product be the means of its propagation or reproduction; but the purchase of such product shall not confer on the purchaser the right to grow the variety, unless that right is conveyed in writing by the owner of the protective right.

Section 16. Every sale of the right to grow a protected variety, shall include and convey to the purchaser the right to propagate it on his or her own estate, to obtain the lawfully saleable product, or for the purpose of ornament.

Section 17. Every proprietor of a protected variety shall supply every purchaser of the plant, cuttings, buds, scions, roots, bulbs, seeds, therewith, sold by him, a copy of the protective letter therefor, and shall give the said purchaser a grant of the right to grow the variety, and sell the marketable product.

Several punitive provisions would be necessary, granting one half the amount paid as a penalty for infringement, to the informer. Protected varieties fraudulently sold and disseminated before public sale and dissemination by the lawful owners should be forfeited wherever found. Plants of a protected variety, wrongfully exposed for sale by any one, should also be forfeited; but in case of plants of a protected variety, *after* its dissemination by the lawful owner, having been purchased of some party not authorized to sell them and planted on the place of the purchaser, the latter should be allowed to retain them on condition of paying the ordinary price of the plants. A severe penalty would be required for selling a protected variety under another name, and without a name as if unprotected, with intent to defraud. Propagation is inseparable from growth with a large majority of plants, and also constitutes part of their use, therefore, the right to grow includes the right to propagate in all cases. It is also evident that the method of protection, must conform to the nature of the plant to be protected, and the purpose for which it is grown. A grape vine for instance is a perennial plant, and is valued by the public principally for its fruit, consequently the proprietor of a new variety can be given the sole right to sell plants and cuttings. But the potato plant is an annual, is not sold, and if the proprietor of a new variety were given the sole right to sell the potatoes, it would cut off the market. Purchasers must be allowed to sell the edible product of a new variety, but the mere fact of possessing that product, unless purchased of the owner of the protective right for that purpose, ought not to give the possessor the right to grow it, which would be manufacture without compensating the owner. The reason is obvious; if the possessor purchases the variety of the owner he compensates him; if he purchases it of some other grower, he does nothing of the kind.

The classes of plants embraced in seven sections as here represented, are grouped according to their nature and the purpose for which they are valued. Section 1 includes all such fruit and seed bearing plants and ornamental plants, as are perennial, and not usually reproduced from seed, but by cuttings from the top, or root, layers, bulbs, &c. The purchaser of any protected variety belonging to this class for individual use, would have the right to grow and propagate it to obtain and sell the fruit, if it were a fruit bearing plant, and if an ornamental plant, the right to grow and propagate it for ornament, or to sell the flowers and foliage. Plants and cuttings of variety in either case, he would have no right to sell, to be grown apart from his grounds. Section 2 explains itself. Section 3 comprises such ornamental plants, as are propagated both from the roots and seed and the tops of which die annually. The purchaser

of the seed of any variety included in section 4 would have the right to sell the plants raised therefrom as food, but not the seed unless included in the sale of the right to grow the variety on his estate or with it. Adornment would be the object of the purchaser of anything in section 5, and plants and seeds could be sold only in the same way. Section 6 includes such vegetable fruits, as melons, tomatoes, &c., borne by an annual plant. The exclusive right of the originator to sell the seed apart from the product, would give him a great advantage in disseminating the variety. Besides purchase of the product, would not confer the right to grow the variety, unless purchased of the owner of the protective right for that purpose. Section 7 comprises a very important class of plants, and the royalty is proposed thereon, as the best and most practicable method of protecting them.

[In accordance with our custom of giving all sides a fair hearing, when the subject has an interest for horticulture, we publish the above. We trust our cotemporaries however will not consider that the *Gardener's Monthly* endorses it. It believes that the discoverer of a new idea should be paid for it. It believes that brains in horticulture are worth at least as much as brains any where. It is not on this ground that it does not endorse the proposition ; but solely because it regards protection in this shape impracticable. Ed. G. M.]

SOMETHING FROM KANSAS.

BY J. E. VANDEMAN, GENEVA, KANSAS.

It has long been my intention to write to you. Very rarely I see a few words from our State in your columns, and if I can add a mite to the general fund of horticultural knowledge, or if you want an occasional letter from our country, I may write to you whether you deem it worth publishing or not. I have but four years' experience in Kansas. Practical horticulture here is not discouraging, although in some things I have been disappointed. We cannot raise strawberries here to profit except in rare cases ; raspberries and blackberries do well if mulched, otherwise they are apt to dry up just as they are ripening, and as they did this year. There is no use to say that gooseberries grow and bear to perfection.

"Here the vine her graceful tendrils shoot;
Hangs out her glowing clusters to the sun
And scarcely wishes for a warmer clime."

In fact I never saw grapes do better in any of the Eastern States. I believe Kansas-grown Concords are much better than any I have eaten elsewhere.

Peaches even this year are far from a failure. I only speak for the Southern part of the State as to the peach crop, for I have not been North this summer. As "W. H. J." of Topeka, says, "they are but half a crop and small at that." By the way, if you will bear with me I will give an account of our troubles, &c., beginning with spring. The first thing was a disease of the peach foliage, (not an insect, for I examined) which caused the leaf to curl by a restriction or non-development of the veinal system, and a consequent casting of nearly all the fruit. One thing that puzzles me is why the budded or improved varities were not so affected; *no, not in the least.* The poorer the variety of fruit the worse the disease. Consequently nearly all the peaches we have are on the best trees. Hale's Early gave a splendid crop, as it was too early for the drouth. Next came the insect war, of which I will say nothing now, because if I were to *begin* it would take too long to *finish.* In a separate article I may tell you, after Jack Frost has kindly locked the last devouring jaw.

But the drouth followed close upon the heels of a late spring, and cut short nearly everything. Early apples did well but the trees being defoliated by grasshoppers in the last of August, the fall and winter varieties will be almost a failure. They sunscald and fail to develop.

Even grapes are affected by drouth, as they cast their leaves early in some cases, or at best could not attain their usual excellence. Notwithstanding all the discouragements of the season we have comparatively a good share of the necessaries of life. We have wheat and corn enough for use. Prudent fruit growers and farmers who have the right kind of housekeepers, have plenty of berries, cherries, grapes, chicasa plums, peaches, &c., stored or yet to store. I have to day canned a lot of as nice Old Mixon peaches, as I could desire.

Many are leaving Kansas—some perhaps for good reasons. As for me, I shall "stay to see the last dog hung." As my friend, Professor Gale, of our State Agricultural College, said to me lately, "*Kansas has done too much within the last ten years to lose faith in her now.*" It pleased me to see your kindly notice of our State Report for 1872. We did not judge it so well. It was our first effort—we hope to do better. And now that I think of it, I do not know that Mr. Brackett, who is Secretary of our State Horticultural Society has given you notice of our next meeting, which is to be held at Emporia, next December, 15th, 16th and 17th, but I do know that he will not care at any rate if I extend to all horticulturists a cordial, earnest invitation to attend. We cannot show you much good fruit, *this dry grasshopper year*, but come and see what we have, and give us some of your valuable knowledge. We will be glad to have any of you present and entertain you the best we can. Remember it is the week following the meeting of the Illinois Horticultural Society. You Eastern folks might attend both in one trip. Having once been entertained at the house of a mutual friend in Sandusky, Ohio, and enjoyed your society during the meetings of the Ohio Pomological Society several years ago, when a mere boy (and I'm not much more now) I know your kindly forbearance, and will not now further impose upon it.

[It gives us great pleasure to receive Western notes. Our own rather extended observations in the West, leads us to hope for good things in a horticultural way, as wealth and leisure grow in that favored region, and these notes of progress are always welcome.—Ed. G. M.]

BASKET PLANTS.

BY W. F.

Lobelias.—The Erinus varieties are extremely serviceable for basket, bracket, vase, or window-box uses, and they afford almost any shade of blue--a color much desired. For this purpose I prefer seedlings, because I find that seedlings are of a looser or more rambling character than cuttings. Where these Lobelias are grown for bedding purposes, the ramblers may be selected for basket work, and the compact ones preserved for the flower garden, for which purpose they are the most useful. The Crystal Palace variety of L. E. speciosa (deep blue), Blue King, Mazarine Gem, Gordonii, and Paxtoniana, I consider about the best varieties, and to these may be added some plants of L. ramosa, of which there are white, lilac, and blue varieties. White flowering Lobelias are often so unsatisfactory in their blooming qualities, that I do not place much dependence on them. Lobelias like moisture, rich soil, and partial shade from strong sunshine.

Mikania scandens (*German Ivy*).—A very common plant in this country, but scarcely known in English gardens. It has shining deep green, ivy-like leaves, is of a climbing and rambling habit, growing very speedily, and twisting around every thing within its reach. It is a good basket plant when used in company with a central specimen of some other genus ; and if it has plenty of root room and rich soil, its shoots are produced in great pendant festoons. It strikes very freely from cuttiugs, and the old plants may be wintered under a stage in a greenhouse or cellar, and taken forth and started in spring.

Othonna crassifolia.—This is an extremely pretty little species of Bagwort, suitable for brackets or hanging baskets. It is of a prostrate habit, its stems depending over the sides of the pot or basket, and brightly enlivened by numerous small, yellow flowers. Its leaves are glaucous-green, fleshy, long and roundish, but generally varying a little in form. It is a good window or cool greenhouse plant, and blooms most freely when grown in a sunny position. It is propagated by means of seeds and cuttings.

Panicum variegatum (*oplismenis imbecilis*).—An excellent basket plant. The leaves are green and longitudinally and broadly striped with pure white, and when grown in well-lighted places they assume a reddish copper color. As every knee of this grass will emit roots and grow, it is readily increased from cuttings of one or more joints. It is most at home in a stove, but it also grows freely in a cool greenhouse, or inside a dwelling house window, provided it be protected from frost, and not moved to the parching heat from a kitchen stove. In the basket it may be planted around the inside edge of the bowl, or inserted between the wire meshes, when it will soon entirely hide the basket. I have seen some very pretty ornaments made by filling suspended baskets with this plant alone, and letting it grow as it will, when in a short time nothing could be seen because of it, but the chain or wire that suspended the basket.

Pelargoniums (*Ivy-leaved*).—I think these are the best and most accommodating of conservatory or parlor basket plants, and for windows or balcony boxes they have few equals. They will suffer more drought with impunity when growing than any other kind of Pelargoniums, and grow, flourish, and bloom profusely in the sunniest position available. Like the Irish Ivy, they depend in rich festoons of glossy green, or white and green around whatever they are grown in,

and are richly endowed with flowers varying in color according to kind, from white to red, including various shades of pinkish-lilac. They may occupy the whole of the basket, or be mixed with other plants. Propagate from cutting. The following are a few good kinds: Duke of Edinburgh, L'elegante, Willsii, Peltatum elegans, Argus, Dolly Varden, Treasure and Remarkable.

Peristrophe angustifolia aureo variegata.—This is a sweet little plant, of a dense growing and spreading, but somewhat squat habit. Its leaves are largely marked in the centre with bright orange yellow, and the centre of each branchlet terminates with axillary and thin umbels of purplish flowers, which I like to see pinched off rather than retained. This little plant should be wintered in a temperature not lower than 50°, but in summer may be grown in a sunny window, out of doors, greenhouse, or stove, with telling results. It may occupy a small basket by itsef, or be mixed with other plants as required. Propagate from cuttings.

Petunias.—These are too common to need description, and no matter whether we use them for baskets, vases, window pots, or boxes, or the flower garden, they are in all cases equally eligible. From seed they come in great variety; but the plants having blooms of superior coloring, shape and substance, are perpetuated by means of cuttings, as are also the double flowering sorts. We generally treat them as annuals, sowing them in March or April, in a greenhouse or frame, or out of doors, about the end of April; and our select plants require some light, and protection from frost during winter, and to be repotted and started into growth in spring.

Pitcher Plants.—The Nepenthes are the only eligible Pitcher plants of my acquaintance for basket work, as Sarracenias, Darlingtonias and Cephalotus, are only grown to advantage in pots and pans. The pitchers of the lower leaves of the genus in question, however, hang down so far, that were the plants not grown in suspended baskets, they must inevitably rest on the ground or stage, and thus be partially hidden, if not destroyed. A peep into the Nepenthes House at Veitch's Nurseries, London, is a splendid sight, and one to be remembered. There, N. distillatoria ampullacea, and other rampant growing sorts, act as climbers; N. Hookeriana, Rafflesiana, Sedeni, lanata, rubra, and the rare sanguinea, are flourishing in wooden baskets in a compost of sphagnum and rough peat, suspended from the roof, whilst a general stock of all sorts are growing, plunged in the central bed. Seas of tepid water at the root, and showers overhead, are administered to them when growing, and at no period of the year are they kept anything like dry. They are shaded from hot sun, and otherwise simply grown in a hot vapor bath. They are increased from cuttings of well-ripened young wood, and should be grown into little specimens in pots before transplanting to the basket. At Chatsworth the famous Amherstia nobilis house is surrounded in the inside by a curtain of these rare plants, that thrive amazingly, growing in boxes, and trained upwards. In the same house branches that are thinned out are stuck into the Derbyshire spar that covers the front stage, and in this alone they root more freely and quickly than in anything else I have seen tried. N. distillatoria, ampullacea, and some others, when they begin to grow rankly, should be transferred from the baskets to act as climbers.

Pothos argyrea (*Scindapsus pictus*).—This is one of the best of stove plants for suspended baskets, for covering a dwarf trellis, or for training against a damp wall like Ivy; it is likewise an excellent subject for growing in a Fern or Wardian case. The leaves are fleshy, of a deep green color blotched with silvery grey, and of roundish or obliquely-ovate shape. The plants are propagated from cuttings, require a spongy soil, sifted free from the finer portion (peat and chopped sphagnum makes a good compost for it), and a close, moist atmosphere. Small baskets are most suitable for it, and there I like to see it sole occupant.

Rivinias.—These are Central America plants, with neat, small, shrubby stems, and bearing very ornamental racemes of little bright scarlet or yellow berries. I highly recommend them as basket plants, for I think a few seedlings of these used, in company with other plants, have a telling effect not to be produced by any substitute. As they are so easily raised from seed, and flower and fruit so persistently in poor soil, I prefer young plants to old ones. R. humilis, and its varieties canescens and lævis, furnish dull and glowing crimson berries, and flavescens yellow ones.

Saxifrages.—S. sarmentosa, S. tricolor, and S. Fortunii, I consider the best adapted for basket or suspended pot furnishing. The mother of thousands, as S. sarmentosa is commonly called, is a genuine cottager's favorite, and an old one too. From our earliest memories we can depict the little pot with this pet suspended in the window, and all its little ones hanging down, as it were by strings from their parent. The leaves are pretty and the flowers are pretty, and a young stock of them may be obtained from these runners just in the same way as Strawberries. I like to see them the sole owners of small baskets or suspended pots.

Sedum Sieboldii variegata.—A beautiful little plant, either when growing or in flower, and one well fitted for basket work or suspended pots. The leaves are much colored, with creamy-white, and thickly produced on prostrate or drooping stems that grow from 8 to 12 inches long, and when fully grown are terminated by a cluster of star-like pinkish flowers. The plants die down to the ground in winter. It is a good window plant, and may be wintered on a back shelf or in a cellar, provided the soil in the pots be dry. I like to see single specimens of this plant grown in the baskets without any auxiliary, and, indeed, I prefer pots to baskets for growing it in. It is easily increased by division of the crown when starting to grow.

Sibthorpias.—These are prostrate little yellow flowering plants, with multitudinous small semiform leaves. S. Europœa is a great favorite as a bracket or suspended pot plant, its leafy stems creeping over the pots like a mossy carpet. It is hardy, but is partial to the protection of a window or greenhouse, where it loves a damp and shady nook,—but not a dark one. It is an old fashioned cottager's plant. At the Lawson Nurseries, Edinburg, I saw some hundreds of a most beautifully white variegated form of this Sibthorpia, the coloring being conspicuous, distinct, and permanent. S. prostrata is a stronger growing sort than the former, and a good basket plant. They may be increased by means of cuttings, or division of the old plants.

Smilax (*Myrsiphyllum Asparagoides*).—This favorite needs no description, as its uses in the ornamentation of our greenhouses, the furnishing of our bouquets and vases with "greens," and for every purpose for which cut flowers are used, are too well known to require explanation. As a basket plant, small plants of it may be used with good advantage. It may be increased from roots, but is almost universally raised from seeds.

Streptocarpus Rhexii.—Some may think it strange to class this plant amongst those recommended for baskets; but I have seen it elsewhere, and used it myself with excellent effect for this purpose; in fact, in old greenhouses, or stoves where the plant has been introduced, and its seeds permitted to ripen and scatter, spontaneous seedlings appear on the floor, in other pots, on the walls, or anywhere, where they can exist I would not recommend them for filling the centre of baskets, but merely for introducing here and there between the wire meshes. The leaves resemble a rosette, and the flowers are bluish, tubulose funnel-shaped, and produced singly on a scape arising a few inches above the leaves.

Torenia Asiatica.—A little serophulariaceous plant, of running or pendant character; a free grower and profuse flowerer, the blooms being bluish; indeed, I consider this species the finest of the genus. It fills a basket well of itself, or in company with other plants, requires a greenhouse temperature, grows well in a room, and strongly in a stove. It propagates readily from cuttings, and is much relished by green fly; but tobacco smoke soon destroys this pest.

Tradescantias.—T. viridis, the yellow variegated form of the same, and T. zebrina, are the best of my acquaintance for basket work. They are usually treated as greenhouse plants. They luxuriate in the stove; and, as a window plant, T. viridis has scarcely an equal. They are easily propagated by cuttings as almost any weed, and as they are of speedy growth, they are well adapted for hanging over the edges of baskets or vases, or growing in pots in brackets. A neighbor lady, here, had a plant of T. viridis growing in a pot suspended from the ceiling by a piece of string. During the winter this treasure grew in the kitchen, where the stove heat had little effect on it, and, as the spring time set in, it was removed to the back kitchen window, away from the dry heat. As it was now placed over the sink, the steam from the hot water used in washing dishes and other things, affected it badly, so it was transferred to a dark corner away from the window, where it still remains, and is in good health, but its shoots are weaker than if it were grown nearer the window.

Tropœolums.—T. Lobbii, and the very fine varieties of the same, are invaluable basket or vase plants, as they grow freely and stubbily, and produce an abundance of intensely colored blooms when suspended. This kind and its varieties have not the coarse look about them that is visible in T. majus or minus, the absence of both of which I admire more than their presence for this purpose. T. tricolorum, speciosum, Jarratii, and all that section, I consider of no avail for this purpose, as their merits are better shown when climbing upwards, than

when drooping; besides, the particularity required in growing them, and the punctual season of their blooming, render them awkward subjects for basket work. In order to keep the varieties of T. Lobbii true to character, they should be propagated by cuttings, which may be inserted as thickly as Verbenas, in pots, and placed on store-shelves during the winter, planting one or two into a basket as required. They should always be used in company with other plants, and never alone for this purpose. For window boxes and balcony gardening they are excellent subjects; and as rafter or pillar climbers in a greenhouse, they are brilliant objects.

In addition to the plants I have individually referred to, there are hosts of others that might be advantageously used as basket plants, but I only consider them third-rate for that purpose. Even some of prostrate, pendant and scandent habit, that might appear first-rate, I consider them more suitable for pots than baskets, hence, I have excluded them.

The finest window plant I ever saw was at a roadside cottage at Turnham Green, England. It was Cereus flagelliformis, or the "rat-tailed Cactus," as I used to call it, growing in a pot, and having a massive bundle of drooping rod-shaped stems some 3 feet long, and in its season clouded with rosy-pink flowers. It has since been purchased by Mr. Peacock, of Hammersmith, for ten guineas. This very specimen has been extolled as a basket plant in several English papers, but in my opinion it is unfit for that purpose, and is most at home in a pot.

Most of the greenhouse evergreens, Mesembryanthemums, are well suited for mixing in baskets for sunny positions, as there they produce their brilliant and showy blooms in abundance. Sedum carneum variegatum, a beautiful little succulent, has a good effect when well grown and inserted in baskets amongst other plants. The variegated forms of Euonymus japonicus, and some of the finer forms of the Vincas, Periwinkles, are good additions to large conservatory or balcony baskets, where also Brachysema acuminata and Mimosa prostrata might find a place. Aotus gracillimus is a graceful and profuse blooming greenhouse plant, of which small specimens are becoming in baskets; and Russellia juncea, another graceful plant, but requiring more heat than the other, may be used as a central specimen, or small plants of it for mixing. Brilliantly colored Verbenas have sometimes a telling appearance in baskets. The Reineckia (Sansevierila) carnea variegata is often recommended for this end, and it may be tastefully employed for it sometimes; but I think a flat pan or pot suits it best. I have seen the beautiful little Bertolonias (perfect gems), Gymnostachyums and Crystoderias, used as basket plants; but with the exception of some of the last named tribe, I feel confident that shallow seed-pans would suit them better. Alocasia Jenningsii has also been lauded as a good basket plant, but this too I also think, finds a true home only in a shallow pot, or a seed-pan. Some plants of the Araceæ family might be effectually employed for basket work in damp stoves, as for instance, Philodendron Lindeni, one of the most beautiful leaved low climbers we possess, and Monstera obliqua.

EDITORIAL.

1875.

We are not given to taking people into our confidence, but—our publisher being busily engaged with the index—we want to say in secret that he is a little proud of this work.—He thinks there is nothing like the *Gardener's Monthly* under the sun. He is usually a remarkably meek and mild mannered man. But like Moses, he can get mad sometimes. We never saw him this way but once, and that was when some innocent wight asked him if he were not going to get out a chromo, give away a watch, or some other thing "worth twenty dollars," in order to get a two dollar subscriber. It was then that the color rose in its majesty on his candid cheeks. "Young man," says he, "when I go round with a hand organ I intend to make the music worth the money, without being bothered with a monkey." After that terrible scene, our duty was plain. We knew that the little red jacket, just extending to the cauda appendage; and those delicate little fingers holding out the dear little hat for the pennies, would never be exhibited in behalf of the *Gardener's Monthly*, and that it rested with us alone to make it worth all it brought. We will only say that our publisher seems satisfied with what we have done. He says his pages are very large; and that if the lines are counted, and tied into a rope, they would make one that would reach to New York. Indeed he wants people to count the lines. He thinks it would be good Christmas exercise for the children. He says no other *similar magazine in the world* gives so long a line for two dollars. As for the matter of which these lines are made, this is not for us to talk about. We only see that the audience about us is growing larger and larger every year, and we feel encouraged to speak louder and longer. If there be any who are not satisfied with what we have done, we ask them to wait another year. We think we have learned a thing or two that will interest them. We hope to be useful even to every one, though he may not have a heart above a cabbage, or she any love beyond one poor rose. But what we mean to do is a secret also; and only that we see our publisher has just finished the index, we would tell that too.

TRAVELING RECOLLECTIONS.

Just for a couple of days' holiday last autumn, the writer took a trip into Connecticut by the New Haven Railroad to Hartford,—one of the prettiest roads to travel over, by those who love to look on varied natural beauty. Few of the towns through which one passes, strike one as large as is expected; but they follow one another very closely, and the large number of intelligent looking and self-possessed people who get off and on at each station, shows one is in the midst of a tolerably abundant and refined community. And yet, so far as can be judged from a rapid railroad view, there is not as much of the higher branches of gardening in existence as would be expected from a cultured community. Fruit trees—that is apples—abound. Even apparently well-to-do people, with land enough for just a little tasteful design in gardening, would generally have apple trees crowding all around the house, making shade for the building as well as furnishing food to eat. In many cases the good wife evidently had struggled with tolerable success against this materialistic tendency. To the argument of the liege lord, that it is just as well to have something to eat as well as something to look pretty, she had not always assented by having pretty scarlet tomatoes, red beets, or purple egg plants, crowding up to the parlor door; but a rose or a woodbine, or peradventure a Geranium or some other flower, though fruitless and tasteless, affording neither food nor raiment, would find an honored place. Those of more moderate means among the richer classes would also have tolerably well-kept grounds; but to often the larger places indicated neglect, as if the owners had started out with more than they could well accomplish. Of course there are many exceptions to this state of affairs, but not to such an extent as we looked for from the proverbial culture of New England towns. Some had evidently tired of this state of affairs, and were endeavoring to improve; but apparently without the aid of the *Gardener's Monthly*, for they would spend an immense amount of money for a very poor end, in ways which no good reader of this journal would ever do. In one place, for instance, an unfortunate ruralist had attempted to stock his place with large trees, chiefly Elms. These did not appear to be more than 12 or 18 inches round, and perhaps 25 or 30 feet high To most of our readers such trees would be mere bagatelles. Many of them would contract to dig up and replant such trees for about five or ten dollars each, and leave them so set in the ground that no one but a practitioner would know that they had been removed. There would have been a fair growth of good foliage the same season, giving promise of more than a fair growth for the season following. They would have taken all the roots in order to give the tree a good bottom to stand on; and cut away a portion of the twiggy top to ease the leverage on the roots. Such a thing as a shore to steady a large transplanted tree, he never would think of. Here, things were just the reverse. They looked just like some we have seen, which cost from twenty-five to fifty dollars to "do for,"—trees with a tremendous "ball," but no roots, and tremendously large tops. The "tops" here were plain, and here and there a leaf, not formed by healthy root action of the present season, but feeding on the scanty food stored up in the wood of last year, and which often come from felled trunks without any roots at all. Immense heavy beams, forming triangles and heptagons were piled up against the unfortunate trunks to keep them from tumbling over, the whole place looking like a large lumber yard, with the sea-

soning process just going on. The owner, with eye glass over his nose, was wandering here and there among them, evidently pleased with the few struggling green leaves; but I pictured him in my mind some half dozen years hence, with some younger friend telling him that it is all nonsense to try to transplant large trees.

Turning, however, from gardening as a fine art, to gardening as a means of making money, one will be struck with the immense amount of land under fruit and vegetables. Apples, as we have said, are everywhere, and, much to the disgust of some of our newspaper friends no doubt, none of them are under clean culture. They are stuck in among the rocks and stones, and they seemed to live long and happily. The smiling fruit greeted us in every direction, and both they and their owners had reason to be contented with their lot, as a general thing. Sometimes an industrious Yankee (of former times, for we saw no recent evidences) had gathered off the stones and made fences thereof, and in such cases the land would be given up to grass, or, if not too hilly, garden crops; and such crops! The onions especially, were a wonder. Who ever in the world eat all the onions raised in Connecticut is an impenetrable mystery to us. Potato culture also is an item of considerable extent. Cherries are rather plentiful, but we rarely saw the pear.

Hartford, the capital of the State, is a pretty city. Judging by its buildings, both in the city and suburbs, we should say there is an immense amount of wealth centered there. There were more costly buildings in proportion to their number of houses in the city than we have seen anywhere, while many of them were superb specimens of tasteful art. Of course the rage for French roofs, gives here as elsewhere, abundant ugliness; for though a good Mansard roof can be made extremely beautiful, the great proportion of architects fail to catch any more of its spirit than its inside convenience. Though gardening here, so far as we could see, was in few instances on any extensive scale, the lawns were almost always particularly well kept. We remarked on this phase of beauty to a cynical friend with us; but he only had to say that the Hartfordians did it as an advertisement to their lawn mowers, which were heavily manufactured here! How strange that so many should fail to believe there is any virtue in the world! But we know better; and though it is hard to find out in a day or two's unexpected call, where the good places are, we stumbled on one or two. There is here a *Retreat for the Insane*,—not a mere asylum, but an institution where these unfortunate people are sustained by their own means, or those of their friends. By the kindness of Dr. W. Gordon Russell, one of the directors, we were invited to a walk over the grounds. It was nearly dark before we reached the place, but by the help of back ground of sky we are enabled to judge of the trees and the character of the planting. Many of the trees were of Oaks—the Pin Oak, Swamp White Oak, and the Overcup Oak prevailing. The gems of the grounds, however, were evidently of the English Linden—more beautiful than any we have seen before in America. The Linden Borer, common in other places, has evidently not found the trees here. The grounds occupy about twenty acres we believe, and are very beautifully and effectively laid out, mainly from plans of F. L. Olmsted. The building is elegantly furnished, and a in style well calculated to excite contented and cheerful feelings. Were the writer to be assured of failing intellect in his future years, it would be some comfort if the same messenger would say with it, that he should be confined in a place like this. Many of the patients had beautifully arranged baskets and bouquets of flowers on their tables—one we think we never saw prettier put together; it was, we believe, by the poor lady herself. It was a happy thought of our kind hosts to take our party through the building, while the inmates were at their meals, so that we did not see them. We have visited similar institutions in times past, where this has not been thought of, and it seemed too much like making a show of the unfortunates.

The residence and grounds of Mrs. Colt, on her kind invitation, were visited, though the lady herself was from home. The glass houses here are on a very extensive scale, forming a line around three sides of a rather large kitchen garden. They are mostly devoted to the growth of Grapes, Peaches, Figs and Pineapples. How the gardener, Mr. Maltman, gets through with so much work with the small force at his command, is a mystery to us. Many would worry along, doing a little here and a little there, nothing looking well, and outsiders supposing he did not know how. Mr. M., however, has had judgment enough to do one or two houses up as they ought to be. The vines were in remarkably fine condition, and the fruit all that could be wished. Having shown what he really can do, he gives all the time he can, and the best he can with the rest. We commend this wise plan to gardeners similarly situated. Some of the Grapes are inside, and some have the roots in outside borders. In all cases the last are the best. The flower gardens are beautifully laid out, receiving much of their beauty from a well arranged lake—not as is too often the case, of green slimy water, but of crystal liquid, through which the light shone as clear as day. This good appearance is helped by a pair of beautiful swans, who eat up all green matter that they can reach in the water, and give great pleasure to all who see them, except when they have eggnets about, when it is wise for those who are not familiar with them to defer their acquaintance to a future occasion.

The invitation of Mrs. Colt to visit these grounds, are among the pleasant thoughts of our Hartford recollections.

EDITORIAL NOTES.

DOMESTIC.

Seedless Watermelons.—It is not clear how the practice below produces the results noted, but we give it as we find it in the *Greely Tribune:*

"William Shawson, the champion watermelon grower of Luther County, Cal., raises seedless watermelons, and this is the way he does it: When the vine begins to bear, he lets the first watermelon on each branch grow undisturbed, but covers the branch up with dirt from the first melon to the second one, or within about 6 inches of the end of the branch, and the watermelon that grows near the end of the vine will be a seedless one, the one nearest the body of the vine having kept all the seeds."

Rose, Deuil de Paul Fontaine.—We rarely indulge in the common amusement of laughing at the errors of our contemporaries, because we feel that no magazine, any more than no man, can be perfect, and we doubtless make errors enough of our own. But the following is so funny, that we cannot resist the temptation for once:

"E. Y. Teas, an extensive rose grower of Richmond, Ind., writes: 'The new Perpetual Moss Rose, Devil de Paul Fontain, we find a superb flower, so dark and fine, and free blooming.' It is certainly a desirable variety from the description, but oh, such a name! Can we not have beautiful flowers without their names being linked with that of the Evil One?"

To first make the Devil, and then get scared at him, is hardly fair. The name of course is *Deuil*, which our friend has misprinted Devil. It means sadness or mourning, and in the connection here given is about the equivalent of "To the memory of Paul Fontain" in our language.

Novel Premiums—The Germantown Horticultural Society announced that at a forthcoming meeting there will be distributed among the ladies present, fifty winter flowering Carnations (President DeGraw), in 5-inch pots; and to the persons showing the same plants in three months-at the February meeting, the following premi, ums will be awarded: For the best specimen, one hundred bedding plants; for the second best specimen, fifty bedding plants; for the third best specimen, twenty-five bedding plants. The bedding plants will be delivered in time for planting out in spring. The Carnations are to be treated as house or window plants, and must not be kept in a greenhouse or conservatory during any part of the time.

The Snowberries.—Botanists and gardeners alike have got things a little mixed in regard to these plants. Dr. Asa Gray has recently contributed a paper to the Linnean Society's Journal, clearing up some matters in relation to the botanical question; and we may as well say a few words as to the other. The common Red Snowberry of our gardens—the Indian Currant of some localities—is usually referred to in our nursery catalogues as *Symphoria glomerata.* This is Pursh's name. The generally accepted name is that of Michaux, which is Symphoricarpus vulgaris. It is rather common in shrubberies, but not so much as it deserves to be. Dr. Gray makes eight species; but this is the only one with red fruit. Dr. G., however, describes a new species found in Nevada, with flowers *half an inch long*,—naming it S. longiflorus, the fruit of which he has not seen. It is probably white. The other species—common in gardens—is the White Snowberry, and is S. racemosus, also of Michaux. These two are the only ones that seem so far to have got into cultivation. There is another species allied to the White Snowberry, which grows west of the Mississippi, and east of the Rocky Mountains, which is a stronger grower than that in our gardens, and is worth introducing. This is S. occidentalis of R. Brown. There is another very pretty little bushy species in Colorado, which most of us who have collected have named in our herbariums S. montanus. This Dr. Gray now refers to one previously

named by him in Wright's Plants of Texas, S. rotundifolius. The true S. montanus is a Mexican species. Three supposed Mexican ones, including S. montanus, are united under the one name S. microphyllus. The other species not yet in cultivation, is S. mollis of Nuttall, in California, and S. oreophilus, which also has been confused with S. rotundifolius, as S. montanus in Colorado herbariums. In the paper Dr. Gray has some interesting observations on the nature of the fruit, showing that it is not a berry as some botanists believe, but a species of drupe.

Inspection of Orchards.—Recent daily papers say that the Horticultural Society of Massachusetts lately adopted the draft of an act to be presented to the Legislature of that State, which provides for an inspection of orchards and trees, and the protection of orchards neglected by their owners.

We are often asked to advocate measures similar to what we suppose the above refers to, but do not approve of them. The American Health Association recently agreed on an address to Congress, asking for a "secretary of public health," and an organization similar to that of Secretary of War, or of the Navy. The American Association asks for a Department of Forestry. States ask for a department, or at least laws, with special officers, against weeds; and now a distinguished society asks for something, though it is not clear exactly what,—for fruit trees.

We might advocate all of these as horticulturists and tree lovers; but as citizens we know that all benefits that may accrue from such measures, mean a large increase of office holders and official patronage, of which we have by far too much already,—at least those of us who pay heavy taxes think so. We much prefer that all the good that can be done in this way should come through general intelligence, which private societies and intelligent newspapers and magazines do so much to foster and encourage.

Mr. W. Saunders—A recent *Rural New Yorker* has an excellent likeness of Mr. W. Saunders of the Experimental Gardens at Washington, with a good sketch of his life and services to horticulture. There are few men in America, who have worked more disinterestedly than he to advance horticulture, and the tribute is well deserved.

Mr. Josiah Hoopes.—We have a paper before us with an article said to have been written by "Josiah Hooper." We notice that this is a regular thing. It is a sad commentary on "What's in a name?" There is fortunately no distinguished American garden writer named Hooper, and our agricultural readers may know at once, when they see this, that *Hoopes* is intended.

The Agricultural Department at Washington.—Those who are in the public service have enough to answer for without being charged with sins they never commit. We have seen in very respectable quarters recently, the charge made that the Department of Agriculture sends "agents to Europe to buy up the sweepings of foreign seed shops, with its weed seed and bugs for distribution in this country." It so happened that the writer recently had the opportunity of a conversation with a high Government official, who is in a position to know what has been done by this Department since its formation, and he asserts that no agent has ever been employed by any commissioner to go to Europe to purchase seed.

Pennsylvania Fruit Growers' Society.—We have received the following, which we give place to with much pleasure, and would have done the same for other State societies, if they had taken the same trouble to send the notices to us:

"This Society will hold its annual session in York, Pa., Jan. 20th, 1875, (being the third Wednesday) in the Court House. The York County Agricultural Society has resolved that members of Pennsylvania Fruit Growers' Society shall be entertained as guests of Agricultural Society during their session. A full attendance of members is earnestly requested.

"S. B. HEIGES,
"*Prest. of Penna. F. G. S.*"

Allamanda.—In our notice of the Pennsylvania Horticultural Society, the fine Allamada exhibited was by Mr. Wm. Joyce, gardener to Mrs. Baldwin, not by Mr. Newett as stated. The correction comes from Mr. Newett, for which we thank him.

Not so do we thank a considerable number of writers who have complained about various matters in connection with our report of the Pennsylvania Horticultural Society's meetings during the past two years. We think, however, we can avoid these complaints in future, and, we trust, to the satisfaction of the writers and others.

Country Life.—The *Country Gentleman*, in a well-written article some time ago, expressed the idea, that if gardeners could take in so much of the wants of American country gentlemen, as to superintend both the garden and the farm, so as to make the farm pay and the garden beautiful, without care to the owner, more American gentlemen would take to country life than there are now. It is, it thinks, the care of superintending so much that makes so many prefer city life. It says:

"The mill-owner or merchant may devote himself wholly to outside management, perhaps residing at a distant point, with every department of his business running like clock-work, under practiced overseers or foremen. But a man who buys a landed estate, expecting to make it yield a moderate percentage on its cost, will find it difficult to relieve himself in a corresponding way, to anything like an equal extent."

The idea is worth considering by gardeners generally.

SCRAPS AND QUERIES.

WATERING CARNATIONS IN ROOMS.—A Philadelphia correspondent says: Mrs. B. would be obliged if you would say how often Carnations in a room of about 70° should have water within a week? This query gives us an opportunity to say that one of the most interesting discoveries of the few past years, in relation to plant life is, that not only is heat an agent in evaporation, but that *sun light* is as great, or greater. The mere heat of a room is not, therefore, to be considered in the drying up of plants, but how much sun light also. With the same temperature, double the amount of water will be required, if it be a sunshiny week, or the plants get much sun, than if it be otherwise.

A healthy Carnation, with the pot full of roots, and sun light on it every other day, and the temperature of 70°, would probably need water every other day—water enough to soak through the hole at the bottom of the pot. If the pot be not full of roots, every third day would be sufficient.

TREATMENT OF AN APPLE ORCHARD.—*E. G., Edgemoor, Del*, writes: "I have an Apple orchard with a variety of trees - some old, others young. The trees look well, and were quite full of fruit early in the season. Part of it fell early; the remainder was generally wormy. I find in most of the trees borers have been at work. My men have cut them out. In doing so they have had to scar the trees considerably. Should I put any thing over these cuts to protect the trees? I have had the ground loosened up around each tree, and wish to know if it would be well to lime around them, or if there is anything better I could use. I have a small dwarf Pear orchard, also a few standards among them. The trees look badly,—fruit small and rough. Please give me your best treatment for them."

[If the trees had been properly operated on, there would have been no great wounds from the knife in hunting borers. The injury to trees from barking is in proportion to the transverse diameter of the part stripped. The ordinary Apple borer makes a hole in the bark of about a quarter of an inch in diameter, and this is an injury; but the tree suffers no more if a foot in length of bark is taken off up the stem, so that it be no wider. Borer hunters, with a jack-knife, therefore follow the borer upwards, and do no more injury than the borer has already done. But you have "scarred the trees considerably," and what is to be done now? Haul some earth, and put enough around the trees to cover the scars. It may be but a wheelbarrowful, or so, will be enough for each.

Loosening up the ground around the trees may do good, but it is a costly and round about way of doing it; and at the same time it may do harm. It would have been much better to let the ground alone, and put on, under the trees, a good top dressing of the same kind of earth recommended to cover the scars with. Fruit trees such as these are very grateful for top dressing. Liming may do a little good if there is much vegetable matter in the soil; otherwise not. The stunted dwarf Pear orchard should be severely pruned, and the ground about them well top dressed. The worst dwarf Pear orchard in the world can be renovated by this simple process. - ED. G. M.]

MAKING FLUES DRAW.—*T. O., Middlebury, Ohio*, says: "I saw in the November *Agriculturist* Mr. Henderson's statement of discovering

something new in greenhouse heating. What! shall we say is there nothing new? I suppose the principle of building both flue and chimney is older than Mr. H. himself. As for placing the chimney away from furnace, I would not think of doing so; but carry one flue direct into chimney with a light damper, so that when you light your fire you warm your chimney first, then your flues will draw well. Long or short, that has been my principle of building for twenty years."

[This note is in reference to an article by Mr. Henderson, describing the greenhouses of Mr. Harris, a florist near Philadelphia, in which the flues, after traversing a long distance, return, and ascend from the top of the furnace, the furnace serving as a base for the chimney. The heat from the chimney thus warms the end of the flue, and thus insures a splendid draft.

Nothing is more likely than that some one has had something like this before, as the principle is of course known. Many of us—the writer of this among the number—has often tried to start a fire by burning shavings on the top of the chimney. They have often thought of taking the fire to the top of the chimney, but never the top of the chimney to the fire. Yet as we have said, no doubt some have been more thoughtful. Still we believe no writer has ever made the suggestion in any public magazine that we know of before this article of Mr. Henderson's; and whether Mr. Harris is, or is not, the first one to apply this principle in this way, thousands will thank Mr. Henderson and the *Agriculturist*, for bringing it prominently into notice.

Mr. O.'s suggestion of a damper is a great improvement.—Ed. G. M.]

Solandra.—*W. R. H. H., Staten Island, N. Y.*, says: "As an amateur, I would be glad if you would, through your columns, kindly inform me what kind of a plant the Solandra is, what treatment is necessary as regards temperature. etc., the character and color of its flowers; also its value. I have what I am told is a Solandra. It stands about 6 feet high (in its pot), and is of graceful form; but having only just come into my possession, I have never seen it bloom."

[The Solandra may grow 6 feet high, but is by no means a "graceful" plant. The species under culture are heavy and course. It belongs to the Solanaceous order, such as the Brugmansia and the Datura The flowers are greenish-purple, large, and somewhat trumpet-shaped.—Ed. G. M.]

Silver Thorn.—*H. B., Painesville, Ohio*, asks: "What is the Silver Thorn? What family does it belong to?" [It was figured and described in our December number of 1873. It belongs to the family of *Eleagnaceæ*, to which our Shepherdia, the Buffalo Berry, belongs. The first year or so it is a very harmless-looking plant; but *spines* are produced in great abundance on the old wood. It becomes more spiny with increasing age]

Pyrus japonica.—*S. H. W., Peoria, Ills.*, says: "I desire to plant an ornamental hedge on a southern slope, and in clay soil. Will you please state in your valuable journal the adaptedness of the Cydonia japonica to the purpose? State also the proper distance at which the plants should be set, and oblige a constant reader."

[The Pyrus or Cydonia japonica will do very well in the soil and situation described. One foot apart will be about right. Many people fail with Pyrus japonica as a hedge plant, through fearing to use the shears. They want a hedge "at once," and hence want the plants a foot or so high to begin with. They often remain then two or three years without growing much. Strong one year old plants, *cut to the ground*, will beat these stunted bushes on making a hedge. It is best always to cut back Pyrus japonica severely. Also in planting, do not fear to set deep. Deep planting is an injury to fibrous rooted trees, but rather a benefit to those trees and shrubs which have little else but top roots.—Ed. G. M.]

Ruellia formosa.—"Amateur," Bedford, Mass: Your plant is as named above, commonly so called in gardens, though in the botanical classification of some authors, it has been placed in two other genera. *Acanthaceous* plants, however, to which this belongs, are not well understood as to their generic differences, and horticulturists may be pardoned for adhering to an old name, until those better informed agree on a new one. Under its well-known name of Ruellia formosa, it has often been recommended in this magazine as a good summer-blooming plant. It is not gay, but always in bloom, and endures the sun well.

Red Alpine Strawberry.—*C. B., Hightstown, N. J.*, writes: "Will you please give me a description and your opinion of the Red Alpine Strawberry? You will confer a great favor."

[The Alpine Strawberry is the *Fragraria vesca*, and has not given much to the fruit grower. The Fragraria Virginiana and allies have given us our common garden forms. The leaves of the Alpines are smaller, and more plaited, and the whole growth, runner threads included, is very delicate. The fruit is small, and with a pleasant aromatic taste. It is a native of high northern latitudes, and in high altitudes is found through Europe, and North America down into Mexico. There are botanical characters besides these, not suited to a popular description. In reclaimed boggy land, it is well worth culture. We saw once several acres of a variety of Alpine near Detroit, which had such an immense number of fine fruit, elevated above the foliage, that the lot had a pretty red appearance a long distance away. In dry ground, such as we generally have in gardens, they are not worth planting. As to the Red Alpine, or any Alpine, it is very hard to give characters so that any one can distinguish one from another. When one has a large quantity of each variety growing side by side, differences collectively can be seen; but in each plant they are minute, and require very close observation.—Ed. G. M]

Chimaphila umbellata is the name of the plant sent by S. S., Falmouth, Mass. It is a pretty dwarf evergreen, affecting shady places, but which is said to object to cultivation, though very pretty.

NEW AND RARE FRUITS.

Souvenir du Congress Pear (*See Frontispiece*).—We give, as an illustration to head the annual volume, a plate of this beautiful new Pear, which has already been fruited in this country by several of our leading pomologists, and is believed to be one of those foreign varieties which will prove of universal adaptation, as the Bartlett and some others have done. It varies some what in its russet markings, as in some instances we have seen the fruit of an uniform lemon-yellow It matures about the end of summer.

Golden Champion Grape.—*Mr. Thomas Ottaway, of Middlebury, Ohio*, writes: "Golden Champion I have planted in two different establishments; all do well; free growers in warm vineries; I would not recommend it for cold graperies."

New Western Cherries.—The far West is entering the lists with the East as a raiser of seedling fruits. The following are said to be Oregon seedlings of high excellence:

Willamette.—A seedling from the Royal Ann; very large, light red color, sweet, late; a good market variety.

Clackamas.—An extra fine large black cherry, ripens just before the Black Tartarian, which it much resembles; rich, fine flavor.

Major Francis.—A new cherry of Mr. Walings' raising; very large, black, fine rich flavor ripens just before the Black Tartarian; one of the best cherries in their time; tree vigorous and productive. Took the first premium two years at an Oregon exhibition in succession over all other cherries.

Seedling Grapes.—It is pleasant to make record of the progress and new development of fruit and flower, etc., by the energy, enthusiasm, and skill of cultivators here in the States. It is also pleasant to read the credits given our people by some of the best writers upon horticulture abroad. And while we do these things, and read favorable comments, it becomes us to remember that "all is not gold that glitters," and that time is needed, with varied positions of climate, soils and culture, to test the desirableness of the many new seedlings that are yearly produced. The descriptions of the following two new seedling Grapes, originated by Jas. H. Ricketts of Newburg, N. Y., have been forwarded us by F. R. Elliott. We have, beforetime, noted the good work Mr. Ricketts has done, and hope the glitter of gold now shown in productions, will prove pure gems to the people at large:

Highland or No. 37.—The value of this in Mr. Ricketts' estimate, is such that, although no description of it has ever before been made for the press, yet he has chosen a name to know it by, should it hereafter prove in other hands as good as it is under his care.

The vine is a strong grower—about equal with Concord—and the foliage large, thick and rough; joints 4 to 6 inches, wood dark-brown, and strong, but not rankly coarse or pithy. The bunch varies from 7 to 9 inches in length, is heavily shouldered, berries large roundish oval, bluish-black, with a thick blue bloom; penduncles short, and when separated from the berry, leave no color upon its base; flesh a purplish-yellow, rich, sweet vinous, free from pulp, seeds two, skin firm, free from astringency or harshness, berries even and regular upon the bunch; single bunches have weighed twenty-seven ounces. It ripens a little later than Concord, and holds its fruit firm upon the bunch until after frost.

Backers.—This is an accidental seedling of Clinton, and set down for a dark red wine grape. The growth, foliage and ripening period, are similar to its parent; also its character of propagation and productiveness. The bunch varies, sometimes shouldered with berries loose or open on long penduncles. Again, compact and regular, berries round, medium size, black, with a thick blue bloom. When drawn from the penduncle it shows a deep red color, while near the skin it is almost whitish. The flesh is very juicy, rich vinous, sweet—F. R. E.

DOMESTIC INTELLIGENCE.

HINTS ON SWEET POTATOES.—I will mention some experiments which I made with them in 1861. I commenced in August. On being cut, after digging them, they would turn the whitest about the first quarter of the moon, or soon after, and the darkest about the time of the last quarter. Those dug for seed the last mentioned-time all rotted, while the former saved well. They were put into a house, and were separated by a partition of straw. These experiments were made at the request of Mr. G., mentioned in my former article; but whether it was the moon or not which made the difference, I will leave for others to experiment still further and to decide. My own opinion has been that the moon does not exert any influence over vegetation. If not, it may still serve as a guide to the time when it is best to dig the potato. From my own experiments and observations, as well as from what I can learn by inquiries of others, I think that any one, on making proper trial, will become convinced of this at least: that the potato to keep well, must be dug when it has very little sap in it; that, when it is cut, the surface must heal over white and dry. At such times, also, it will be found much more palatable. The Spanish, especially when dug in full sap, will often turn dark on being cooked, when brought immediately from the patch, and besides it will taste more or less bitter.—*Rural Southerner.*

THE BEST APPLES FOR SOUTH CAROLINA.—We are repeatedly asked for lists of the best varieties of fruit of the various species cultivated here, and we have again and again replied, that to give lists which will suit all localities, soils, tastes, and wants, is utterly impossible. The best we can do is to name such as are generally desirable, and can be grown, in most cases, with a reasonable degree of success in a particular region of country.

A correspondent, residing in the hilly region of Upper South Carolina, who asks us what apples he shall plant, may find the following list of service to him, and most of the varieties named will do well in all parts of the State. Any one intending to plant an orchard, whether of apples, pears, or peaches, should, however, look about him, in his own neighborhood and region of country, and learn what varieties have, in actual experience, proved best for a soil and situation similar to his own, and plant accordingly, trying other kinds as he may desire and can afford to do:

Summer Apples.—Early May, Carolina Red June, Early Harvest, Red Astrachan (very popular for market), Summer Pearmain, Early Joe, Sweet Bough, Horse (for cooking and drying), William's Favorite, Early Red Margaret (or Striped June), Strawberry, Maiden's Blush, Summer Rose.

Autumn Apples.—Bonum, Disharoon, Equinetely (or Bachelor, Buckingham, etc.,) Golden Russet, Hoover, Taunton, Eutaw, Smokehouse.

Winter Apples.—Shockly, Carolina Greening (or Green Cheese), Buncombe, Buff, Vandevere, Lady Apple, Limber Twig, Hall, Clark's Pearmain, Stevenson's winter, Hockett's Sweet, Faust's Winter.

The apple succeeds best on a strong, clayey, or gravelly and rather moist, but well-drained soil. The borer will destroy many trees unless constant attention be given them.—*Rural Carolinian.*

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